

**“COMPLEX PROJECTS: AN ASSESSEMENT OF THE CLIENT’S  
CONTRIBUTION TO OPTIMISING VALUE CREATION”**

by

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## **Abstract**

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Client sponsorship is widely accepted as critical to the successful delivery of projects. Through a series of semi-structures interviews, this report attempts to add to the qualitative exploration of the client sponsor's role by undertaking a case study investigation of a major inner city development project. Despite the sponsor's role being acknowledged as significant in managing commercial and political risks these responsibilities are often 'fudged' resulting in sub-optimal project performance. Complex projects in particular cannot rely on 'predictive' models for effective project definition and must therefore respond dynamically to changing environmental conditions. The speed and quality of client decision making is found to impact on both the integrity of construction process and the quality of the finally realised building.

**Key words:** complex projects, client sponsorship, decision-making, value creation, delivery processes

Word count: 9,836

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**In loving memory of**

**Patrick Blake**

**1945 – 2007**

**Beloved father and friend**

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# **1. Introduction**

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## **1.1 Report Overview**

This study examines the client's impact on the level of value creation for projects. The aim is to show that construction industry performance, which has been widely criticised, is a function of both client and contractor behaviour. This is achieved using case study evidence to explore the role of the client in relation to a complex inner-city development. The investigation focuses on 'how' client behaviour affects the project team's ability to respond to external events.

The report is organised as a linear analytical report. Chapter 2 explores different approaches to project management, including the 'undetermined' uncertainty associated with complex projects. This is followed by an examination of the project sponsor's impact on the level of value creation. Having presented a robust theoretical foundation for research, Chapter 3 and 4 describe the chosen case study and qualitative methods used for analysis.

Research findings are presented in Chapter 5 and describe the nature of project complexity, the client's fulfilment of the sponsorship role and resulting value improvement. Chapter 6 discusses these findings in relation to contemporary management theory and suggests some alternative explanations for research findings.

## 1.2 Research Context

‘*Rethinking Construction*’ (Egan 1998), and its predecessor ‘*Construction the Team*’ (Latham 1994) still have resonance today. Despite *total factor productivity* comparing well against other industries (nCRISP 2003), there has been a consistent drive for construction to improve performance in terms of *time*, *cost* and *quality*. This suggests that labour productivity is reasonably efficient, but that design and management processes still fail to meet client expectations.

The *intra-project perspective* of the 1970s, that separated project *appraisal*, *design* and *management* into discrete stages, has been largely discredited by a more holistic approach associated with the Management of Projects (MoP) framework (Morris & Hough 1987). MoP sees project definition as directly related to the efficiency and effectiveness of project delivery. Investing time and resources in the ‘front end’ planning of projects allows the collective experience of project actors to be harnessed, and an optimal project strategy agreed.

However, in cases where clients seek to deliver unique strategic assets, the ability of the project team to agree an optimal project strategy in advance is likely to be compromised (Galbraith 1977). Assumptions made during conception and specification stages will need to be reassessed over time to take account of changing political and commercial conditions. A consultant project manager is unlikely to have the power or authority to ensure project objectives remains aligned with stakeholder expectations (Winch 2001). For project delivery to remain effective the project team must rely on the quality of client decision making (Thompson 1991).

### 1.3 Scope & Objectives

The purpose of this research is to assess the client sponsor's impact during project delivery, on the level of value creation, for complex projects. It is believed that the project sponsor, as leader of the project coalition, will have a significant influence on both the *efficiency* and *effectiveness* of the construction process.

Research is focussed around the following question;

*“Given that complex projects are characterised by higher levels of uncertainty during delivery, to what extent does the behaviour of the client sponsor, contribute to overall level of value creation?”*

The potential difficulty of assessing multiple variables forces the scope of this study to be limited to a single case study. ‘Value’ can be thought of as the balance between costs of construction and realised stakeholder benefit. The main objective is to demonstrate a link between the quality of client sponsorship, and the ability of the project team to respond positively to emergent events. It is hoped that primary interview and documentary evidence will act as a means for understanding the effect client organisations have on the value creation of projects.



## 2. Literature Review

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### 2.1 The Management Process

#### 2.1.1 Lifecycle Models

A traditional lifecycle view of projects consists of discrete *definition* and *delivery* stages. Definition consists of both *conception* and *specification* (Winch 2002).

Conception involves the development of the client's requirements. Specification uses these requirements to generate an appropriate design brief that meets stakeholder expectations. Both processes are iterative, relying on high levels of creativity, to ensure projects are *effective* at maximising organisational benefit.

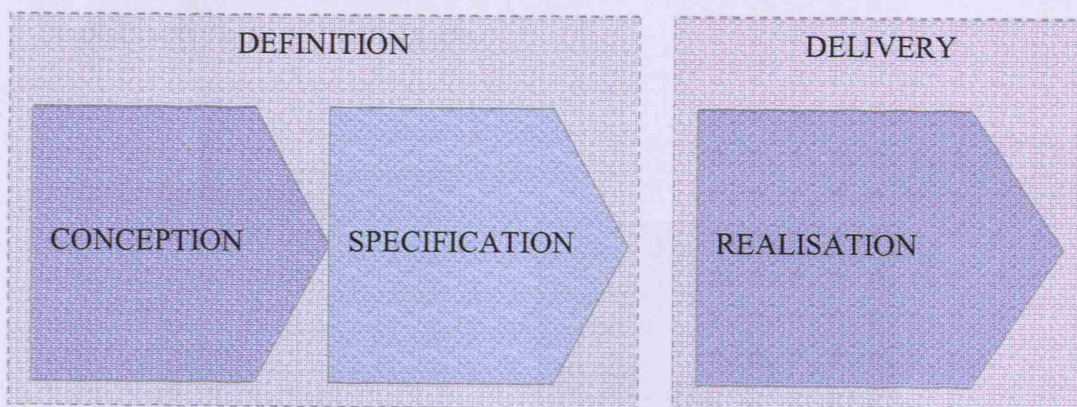


Fig 2.1 – The project process from conception to realisation (Winch 2002)

Delivery on the other hand is seen as sequential problem and largely concerned the *efficient* use of resources. Efficiency improvements move in-line with the management team's ability to enhance production techniques and reduce uncertainty during project definition. When variables that affect the delivery process are finite, and within predictable limits, optimal efficiency is theoretically achievable, and relies only on the appropriate organisation of dependent tasks.

### 2.1.2 Functional Management

Morris and Hough (1987) show that in practice delivery success is highly dependent on effective project definition. The Management of Projects (MoP) framework proposes that investing resources in the 'front-end' development of projects is an effective means of addressing the causes of project failure.

Morris (1994) identifies construction projects in particular as being too concerned with localised planning and control techniques. He proposes that the most significant challenges for project managers relate to external influence often beyond the control of the project team. Consequently MoP tries to reduce uncertainty by taking into account the effect of financial and political factors. MoP proposes that project *objectives, strategy, standards* should take into account a far wider scope of influences, so when corrective action is required, it can be taken without incurring prohibitively high additional costs.

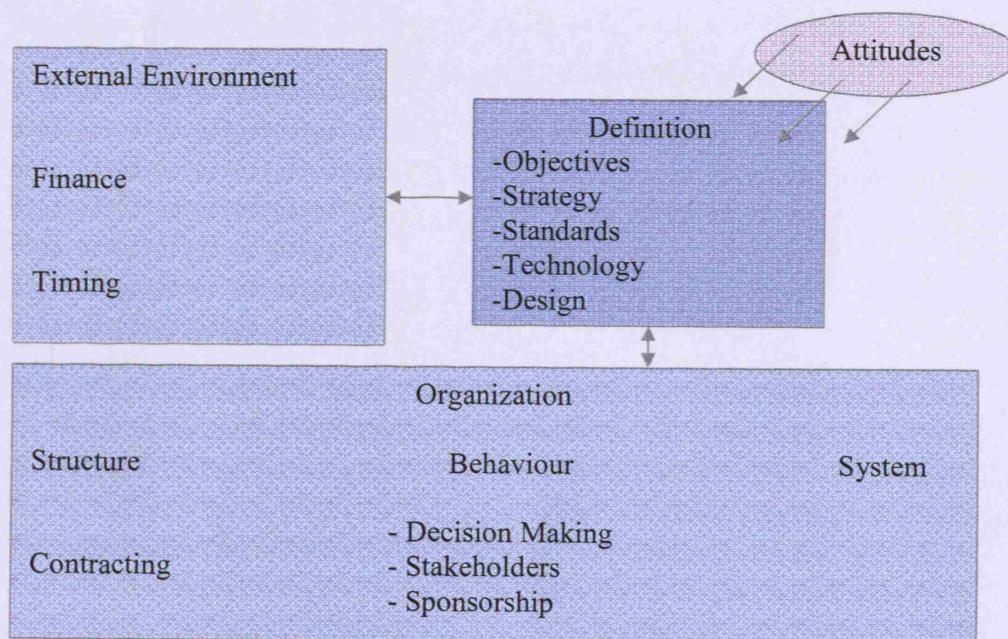


Fig 2.2 – Internal and external influences in the project environment (Morris 1994)

A clear understanding of the project environment relies on the early involvement of all potential stakeholders. Stakeholders will include internal parties directly responsible for carrying out construction work, and external organisations responsible for regulatory standards. Recognising competing stakeholder agendas during the 'front end' planning of projects allows management practices to be proactive rather than reactive.

The recent extension of health and safety powers is an example of the increasing pressure on designers and contractors to collaborate more closely to support safe and efficient site practices. Construction (Design and Management) Regulations (2007) is a good example of where statutory regulations have forced strategic decision to take account of downstream production processes.



## 2.2 Complex Projects

### 2.2.1 Environmental Uncertainty

MoP implies that there is direct correlation between the quality of project definition, and the ability of the project team to predict environmental uncertainty.

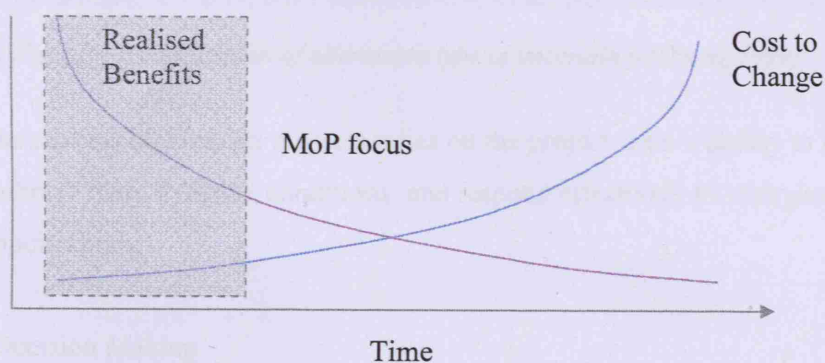


Fig 2.3 – Change costs and associate benefits over time (adapted from BRE 2000)

Early stakeholder discussions help enhance the effectiveness of strategic decisions to significantly enhance value at nominal cost. This principles implies that given enough time and resources, cost-benefit trade-offs can be optimised in advance of delivery. This is reliant though on the identification of all possible variables, and the environmental influences that could potentially affect the project environment (Bernstein 1996).

For complex projects not only are these variables unknown, but their relationship to the project unknown. Obeng (1999) describes such situations as exhibiting 'undetermined complexity' where no amount of time or resources can accurately predict future events. When projects suffer from undetermined complexity, project conception and specification can never be optimal, and must instead respond dynamically to changing environmental conditions.

	Closed System	Open System
Known Source	Deterministic Uncertainty	Variability
Unknown Source	Lack of Information	Undetermined Complexity

Fig 2.4 – Classification of alternative type of uncertainty (Obeng 1999)

The success of complex projects relies on the project team's ability to recognise and embrace these dynamic conditions, and respond effectively to emergent threats and opportunities.

### 2.2.2 Decision Making

When the information available is not sufficient to inform an optimal project strategy then decisions must be taken under conditions of *bounded rationality* (Galbraith 1977). The availability of information increases over the lifecycle projects and is characterised by a dynamic reduction in the level of uncertainty (Winch 2202). Whilst all projects suffer from *dynamic uncertainty* complex projects suffer from this problem more acutely.

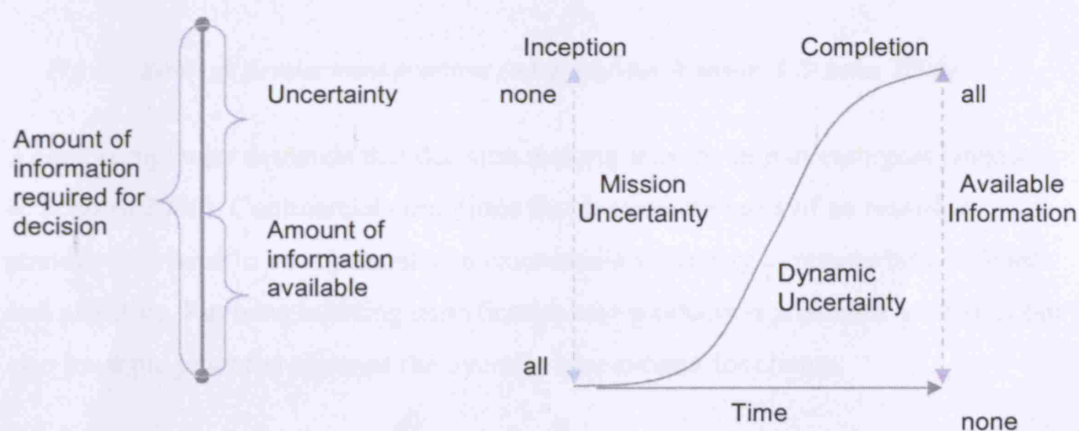


Fig 2.5- Bounded rationality (Galbraith 1977) Fig 2.6- Dynamic uncertainty (Winch 2002)

'Bounded rationality' dictates that during the earliest stages of project definition some predictions about future events will need to be made. This involves either the consultation of historical data or expert opinions (Byrne 1996). Both approaches assume that the past is a robust model for the future. Despite the apparent accuracy of these methods, results are entirely dependent on subjective probability.

In the context of the management process, this makes 'definition' of an effective project strategy more difficult, not just in terms of the project itself, but in relation to the client's commercial expectations.

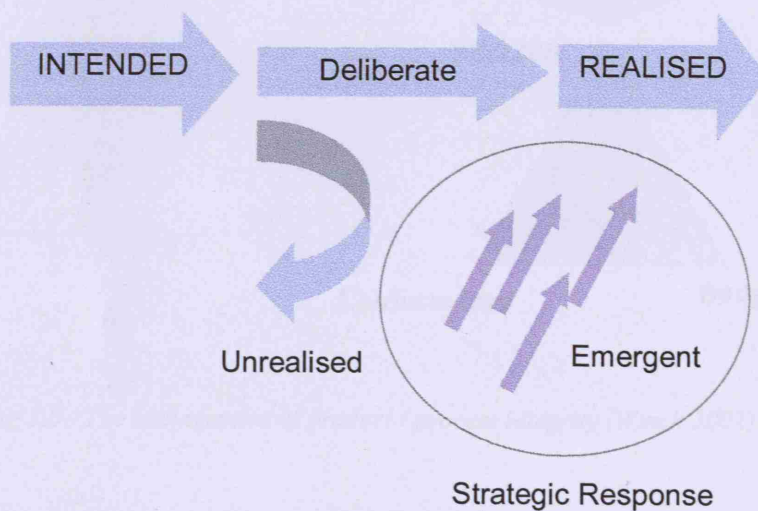


Fig 2.7–Strategy development overtime (adapted from Johnson & Scholes 2006)

Added complexity demands that decision making must be in part emergent (Johnson & Scholes 2006). Commercial conditions that formed the basis of an *intended* strategy will need to be continually re-examined for strategy to remain both efficient and effective. Revising building specification and production processes are costly but also have the potential enhance the overall value created for clients.



### 2.2.3 Product & Process Integrity

Winch (2002) describes project efficiency and effectiveness in terms of product and process integrity.

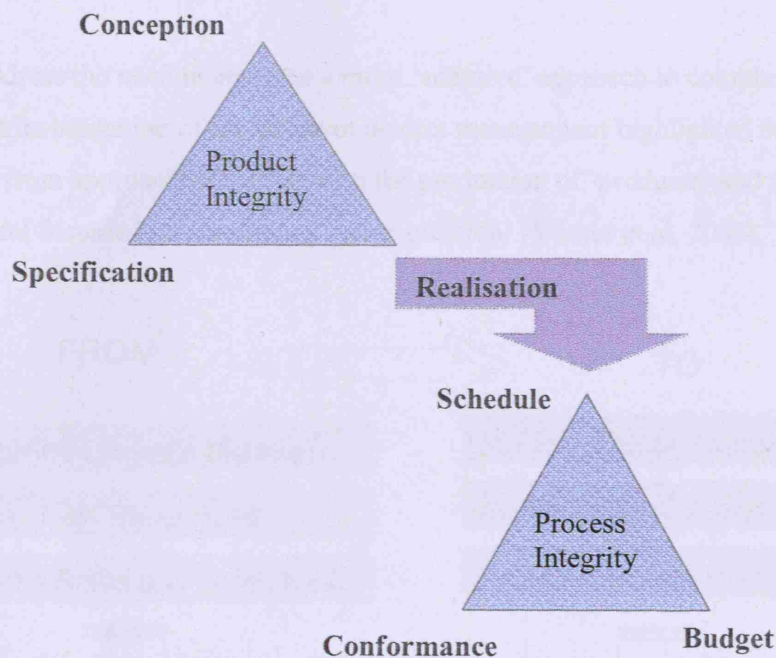


Fig 2.8 - The management of product / process integrity (Winch 2002)

Systems like the RIBA plan of Work (1997) are indicative of approaches which 'decouple' product and process integrity in the name of cost certainty. Fixing design at a relatively early stage assumes that additional costs *always* out-weigh the potential benefits of commercial or technological development.

The assumption is that designing a definitive 'product' in advance of delivery maximises project value. For complex projects though no amount of resources can ensure an optimal product solution. Product development is an ongoing process which benefits from a dynamic increase in the levels of available information.

In practice the tight timescale associated with project definition restricts the amount of product development that is possible. Commercial pressures are likely to mean that the time available to find a comprehensive solution is severely limited.

#### 2.1.4 Value Creation

To address the need to embrace a more 'adaptive' approach to complex projects a recent investigation of the future of project management highlighted the need to get away from approaches that focus on the production of 'products' and move towards a model focussed on continuous 'value creation' (Winter et al. 2006).

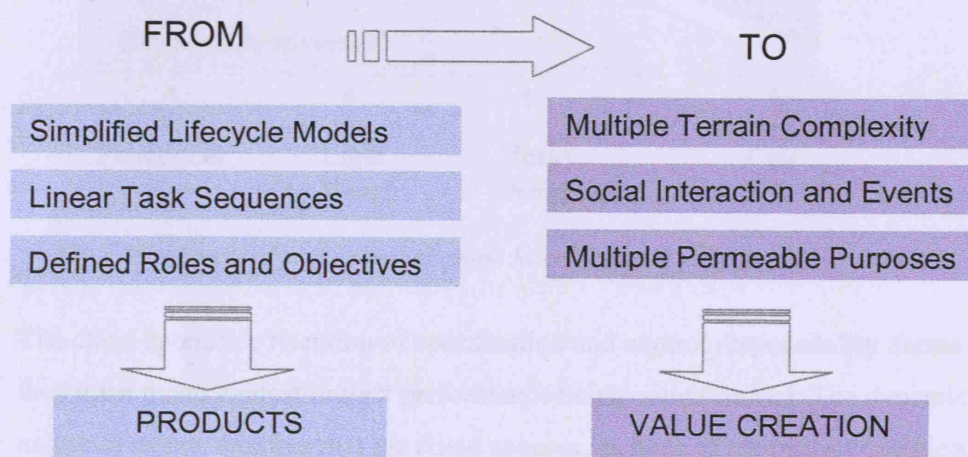


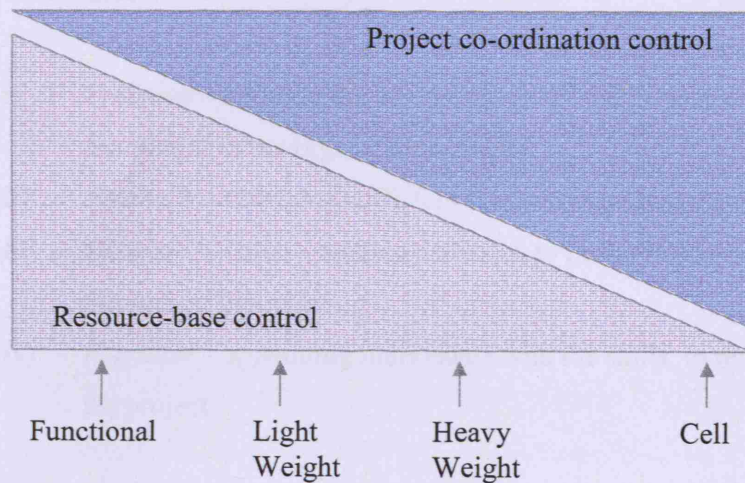
Fig 2.9 – A new emphasis on 'value' creation (Winter et al. 2006)

The value creation paradigm recognises the client organisations are a collection of *permeable purposes*. Projects demand that roles and responsibilities are not necessarily strictly defined but instead the quality of social interaction is actively managed. This is a move away from the 'hard' procedural governance systems of the past towards 'soft' systems approach that promotes the development of a positive behavioural dynamic.

This 'relational' school of thought presents projects as 'becoming' rather than 'being' (Scott 2003). project complexity dictates that the project coalition cannot rely



on predetermined set of rules to guide effective project delivery. Project managers are unlikely to have the knowledge or the authority to sanction strategic change (Winch 2001). Even when it is clear that action is required, a 'functional' project manager will be limited to administering the existing status quo.



*Fig 2.10 – Levels of project management lateral control (Winch 2002)*

The client sponsor's retention of coordination and control responsibility means that they must guard against project performance being compromised. The dynamic nature of events requires that the client sponsor, as head of the project coalition, provides clear direction when it comes to responding to emergent events.

Assuming the same stimuli that caused the project to be initiated in the first place guarantee that it will evolve over time, then without an active client sponsor, both product and process integrity will suffer.

## 2.3 Client Sponsorship

### 3.1 Role & Responsibilities

Winch (2002) describes the client sponsor's role as consisting of four key responsibilities;

- (i) *Promoter* - defining the business case for the project and ensuring it meets organisational needs
- (ii) *Financier* - obtaining sufficient funds to complete the project
- (iii) *Decision –Maker* – making decisions to push the project through its lifecycle
- (iv) *Recruiter* – appointing individuals with the skills to realise the project

Recruitment, financing and promotion of organisational need are most prevalent during project definition, whilst decision-making forms the client's contribution to project delivery. The impact of the client's role on project success is significant and is recognised as more critical than either conflict or changing organisational goals. Top management support has been found to be the single most important 'success factor' when it comes to the delivery of projects (Cooke-Davies 2004).

Factor	Direct	Indirect	Total
Top Management	0.19	0.41	0.60
Project Leader	n/a	0.18	0.18
Project Team	0.16	0.36	0.52
Participation	n/a	0.10	0.10
Planning / Controlling	0.16	0.01	0.17
Communication	0.12	0.06	0.18
Conflicts	- 0.21	- 0.08	- 0.29
Goal Changes	- 0.20	n/a	- 0.20

Fig 2.11 – Weighting eight critical success factors (Cooke-Davies 2004)

Despite the importance of the client's role corporate management is rarely competent when it comes to the dynamic challenges associated with project sponsorship (Thompson 1991).

### 3.2. Successful Integration

Traditionally clients have been seen as a 'unitary' entities (Newcombe 2003), active during project definition, but taking a more passive role during project delivery. The success of clients is not necessarily down to their level of experience but more to do with their ability control project complexity and avoid taking a litigious attitude towards the rest of the project team (Lim and Ling 2002).

Expert clients will have some advantages when it comes to planning projects, but equally the organisational attributes also contribute to the client's ability to influence the efficiency and effectiveness of project delivery. Factors affecting the level of project success includes; (Walker 2007)

- The structure of the client's organisation
- The client's knowledge and experience
- The authority vested in various levels of the client organisation
- The personal characteristics of the client's representative responsible for the project

A client sponsor who is more dynamic in their approach is able to make a positive impact through the speed and timing of their decision making. Equally in their role as promoter of the project business case, they may also be able to add value by exploiting chances to improve functional performance. When opportunities to enhance value arise and are not taken, then undoubtedly this compromises overall value creation (Loosemore et al. 2006).

### 3.3. Risk Attitude

The problem many clients have is that they find it hard to articulate their business needs in design terms (HM Treasury 1997). They are not aware of the relationship between construction costs and the associated organisational benefits of their built assets. This makes it difficult to evaluate 'change costs' in relation to potential value adding opportunities. Once construction begins changes are either seen as not acceptable or at least as highly undesirable (Hetland 2003).

Inexperienced clients with a poor knowledge base are the most likely to have a low *utility* rating for opportunity management. Utility relates to the personal value the project sponsor places on an opportunity to pursue a particular reward (Chapman & Ward 1998). Loosemore (2006) values this utility function using the example of a lottery ticket with 0.5 probability of £10,000 return.

In the first case, provided all parties agree on the probability of winning then rationally the ticket should be worth £5000. This equates to the potential reward multiplied by the probability of a win.

$$(i) \quad \text{EMV Neutral} = \quad \quad \quad \pounds 10,000 \times 0.5 = \pounds 5,000$$

Probability though is subjective and in the second case a 'risk seeking' client sponsor may value the chance of winning £10,000 more highly and therefore be prepared to offer a premium. In such a case they may be prepared to offer £7,000.

$$(ii) \quad \text{EMV Seeking} = \quad \quad \quad \pounds 10,000 \times 0.7 = \pounds 7,000$$

Finally a 'risk averse' attitude may value the potential reward at only a fraction of the agreed probability and only be prepared to spend £2,000.

$$(iii) \quad \text{EMV Averse} = \quad \quad \quad \pounds 10,000 \times 0.2 = \pounds 2,000$$



Although risk and value judgements often occur concurrently they often lack coordination. Recently though there has been an increasing recognition of the link between value and risk management practices (CIRIA 2005, Dallas 2006).

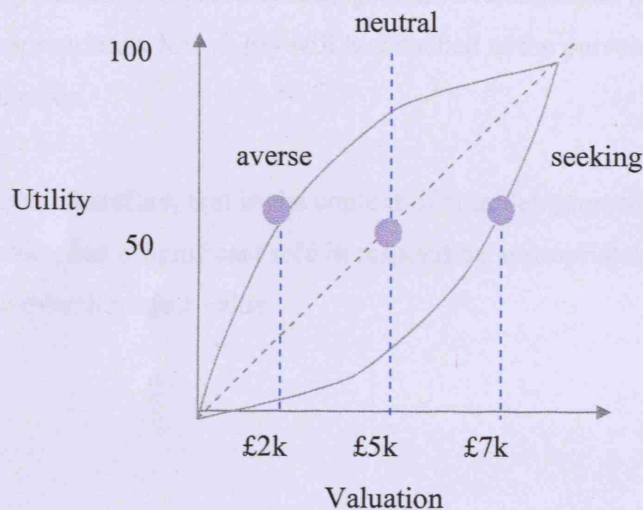


Fig 2.12 – Valuing opportunities using risk utility (Chapman & Ward 1998)

A client who is too risk averse in pursuing opportunities will sacrifice chances to enhance the value of their building assets. On the other hand risk seeking clients may incur disproportionately high costs. Staying as close to the optimal 'risk neutral' position as possible ensures the best returns over the long term (Chapman & Ward 1998).

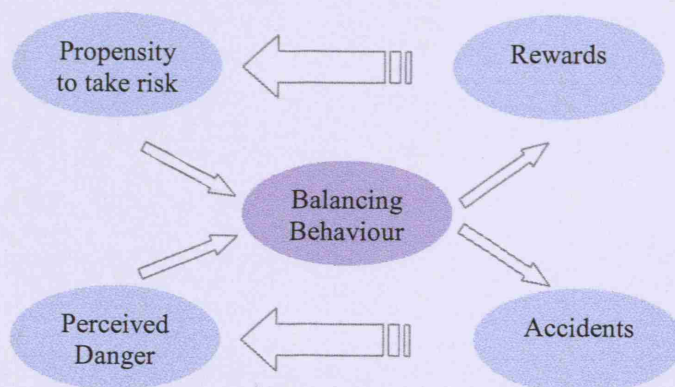


Fig 2.13 – The Risk Thermostat (John Adams 1995)

Conceptually a 'risk thermostat' provides a means of understanding how a 'neutral' risk level might be maintained (Adams 1995). The client will need to develop appropriate balancing behaviour to ensure that they do not take an irrational attitude to value opportunities. If perceived dangers are overestimated then the result will be that an inappropriately low utility will be attached to the pursuit of commercial or political rewards.

It would seem, therefore, that in the context of complex projects the client as principle decision maker has a significant role in responding appropriately to emergent events to optimise overall project value.

## 2.4 Summary

Lifecycle models involving discrete stages of definition and delivery are well established. Examining the expectations of both internal and external stakeholders ensures that *conception*, *specification* and *realisation* consider the widest possible perspective. Morris and Hough (1987) connect delivery success with the scope of awareness not simply the proficiency of programming and control techniques.

Definition can be seen as a question of mitigating delivery uncertainty. Uncertainty arises from either 'lack of information' or 'variability' of environmental influences (Obeng 1999). Improving the quality of definition relies on understanding 'what' the variables are and 'how' they are affected by changing environmental conditions (Bernstein 1996). The assumption is that given enough time and resources, variability can be controlled, and project success guaranteed.

Complex projects are characterised by 'undetermined' uncertainty. This dictates that not all variables can be identified or their variability accurately assessed. A recent review of project management highlighted the need to embrace such complexity and recognise projects as a collection of random but interrelated system elements (Winter et al. 2006). This requires that more traditional sequential lifecycle models are refocused to promote continuous 'value creation'.

Relational thinking promotes the idea of projects 'becoming' rather than 'being' (Scott 2003). This approach stresses the need to develop organisational 'processes' over 'structure'. Projects are seen as inextricably linked to the interaction of *permeable purposes*, *multiple terrains*, and *social interactions*. Recognising unpredictability supports a need to track environmental change, and respond to changing expectations.

Although a project manager may be aware of the need to respond to change, responsibility for overall project co-ordination will usually lie with the client's representative (Winch 2001). Intended strategy is unlikely to be equivalent to realised strategy so emergent events will need to be taken into account for the project to remain effective (Johnson & Scholes 2006). This client 'sponsor' is the only member of the project coalition with the authority to align project and organisational strategy.

The client sponsor as *recruiter*, *financier*, *decision-maker* and *promoter* must respond to developing organisational needs to maximise a project's strategic benefit (Winch 2002). Organisational structure and personal risk attitude will both affect the client sponsor's response to emergent threats and opportunities (Walker 2007). Dynamic and often unpredictable influences dictate that the speed and timing of decision making will be critical to ensure process integrity (Lim and Ling 2002).

For complex projects historical data or expert opinion can only act as a starting point for optimising decision making. Decisions can only be taken using 'bounded rationality' then reappraised to take account of a dynamic reduction in uncertainty (Galbraith 1977). Where external financial or regulatory conditions change then maximising stakeholder 'value' will rely on a risk 'neutral' attitude to pursuing new opportunities.

It is proposed that for complex projects, with inherently high levels of 'undetermined' uncertainty, the client sponsor will have the greatest ability to take advantage of value opportunities, and hence maximise stakeholder benefit.



### **3. Method Description**

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#### **3.1 Pilot Study**

An initial pilot study was undertaken to investigate the feasibility of a quantitative investigation of client decision making. The Emirates Stadium was selected for study on the basis that the client representative had been highly involved in delivery, and the project environment was subject to multiple terrain complexity.

It was found that some subcontractor payments were still outstanding and as such detailed cost information was not available. In addition ‘upside’ and ‘downside’ risk had also been managed locally, making it impossible to assess client decision making in relation to new value opportunities.

These findings prompted a revised qualitative study of ‘how’ client decision making had contributed to value creation, rather than a quantitative calculation of client derived added value. Based on this new research brief, a case study approach was chosen for its ability to explore the complex issues associated with the client’s relationship to the delivery process (Yin 2003).

#### **3.2 Secondary Sources**

To ensure the robustness of research conclusions all possible sources of data were explored. The high profile nature of the Emirates Stadium made obtaining press information relatively straightforward. Unfortunately much of this material was too descriptive to be of use, and could only provide a limited insight into management processes. Where possible, project documentation and a ‘change notice register’, was used to corroborate interview evidence and date specific events.

### 3.3 Primary Data Collection

Semi-structured interviews provided the majority of evidence relating to ‘how’ and ‘why’ events had occurred. For completeness interviews were tap-recorded and then later transcribed. This provided an opportunity to analyse participant responses in more detail than would have been possible from note taking alone.

Participants were selected for their ability to explain events identified in the secondary source material. Employees from the client organisation, main contractor, and consultants firms were all approached and six participants agreed to contribute their opinions to the research. These consisted of two members of the main contractor’s team, two consultants, an architect, and the client representative.

Interviews were tailored to each participant’s particular knowledge and to take into account preceding interview responses. The predominant focus of questioning was on behaviour that added functional value, or improved process efficiency.

### 3.4 Analysis

Codified folders were used to de-contextualise text fragments from the discursive narrative, and group responses into relevant topic areas (Ellis et al. 2005). A quasi-quantification of agreement and disagreement between text fragments provided a means of identifying trends in client behaviour.

Strong agreement was seen to be a robust measure of evidence reliability.

Disagreement was seen as a cautionary indicator that clarification was required. Where possible such issues were flagged for more detailed discussion in later interviews.

The restricted size of the sample meant that sometimes only a single individual had the necessary insight to describe the client's role in relation to value creation.

Where interviewees described aspects of client behaviour beyond the visibility of other project participants, it was generally assumed that these represented a true account of events, although it is acknowledged that this introduces some potential bias.

When presenting findings it was decided to italicise direct quotations to avoid any inadvertent interpretation of material.

### 3.5 Interview Questions

Interviews were guided by a set of recurring lines of inquiry related to the principle research question;

- (i) What were the sources of project complexity?
- (ii) What was the client's relationship to the rest of the project team?
- (iii) How was value added during the delivery process?

All participants were part of the management team so had an appreciation of all relevant issues even if they could not give precise answers. Answers reflected the scope of each participant's knowledge and provided a means of building up a cumulative picture of processes, events and results. Some had more detailed knowledge of specific events than others but every participant could provide at least an indication of the general accuracy of conflicting accounts.

## **4. Case Study      Emirates Stadium, Ashburton Grove**

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### **4.1 Overview**

In August 1997 Arsenal Football Club began planning for a replacement 60,000 seater stadium located on an under-utilised brown-field site at Ashburton Grove. The densely populated surrounding area involved strict planning restrictions and the negotiation of over 3,000 legal documents.

Permission for the stadium was granted in 2001 but work stalled in 2003 when the Islington Stadium Community Alliance (ISCA) challenged Islington council's decision to grant 'compulsory purchase orders' (CPO) against existing tenants. The result was a loss of financial backing putting the entire project at risk.

Despite such setbacks, the new Emirates Stadium was completed in 2006 and received widespread critical acclaim. It appears that Arsenal Football Club were strategically ambitious but empowered the project team with effective governance and decision making.

### **4.2 Complexity**

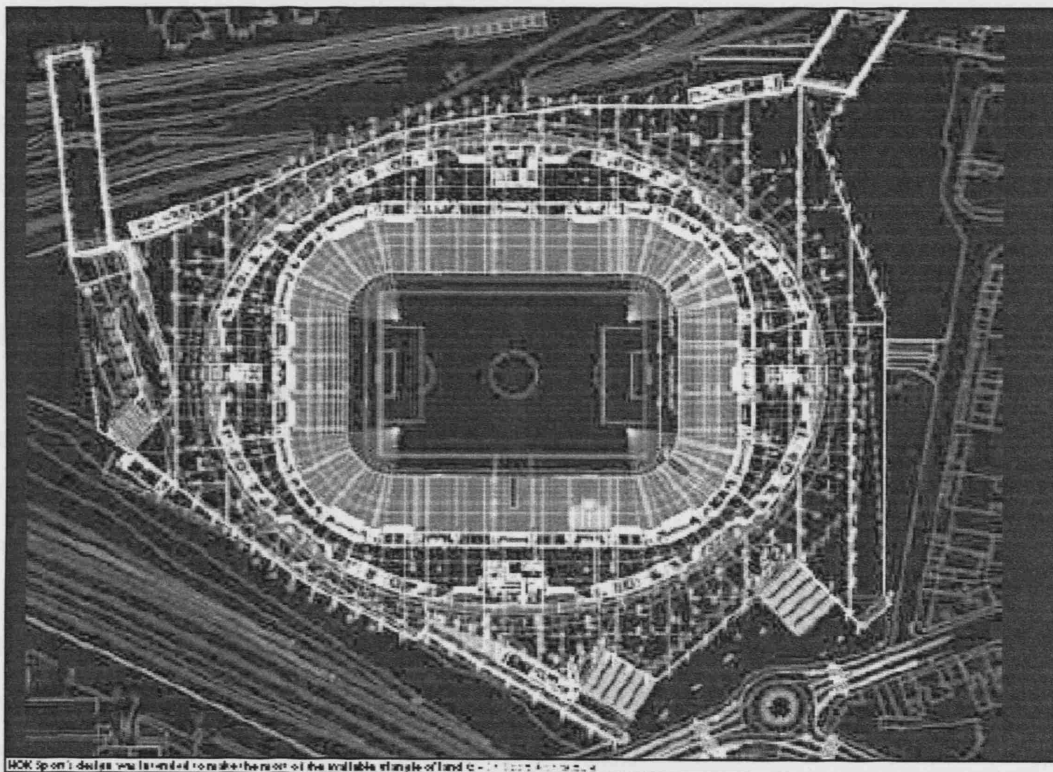
The Ashburton Grove site was triangular in shape (see fig 4.1), bounded by two railway lines, two tube lines, surrounded by residential terraced houses and criss-crossed with an array of sewers and utilities.

The restricted size and shape of available space made optimal use of development potential imperative. Not only must the 7ha site accommodate a world class stadium but also maximize external pedestrian circulation for thousands of match-day visitors.

Islington Council owned the site but, having a duty to the local community, specified three conditions before agreeing to the sale of the land:

- All businesses on the site had to be relocated
- A council waste recycling centre located on the site should suffer no interruption of service
- The stadium development must form part of a wider regeneration scheme for the whole area

The densely populated surrounding area meant strict height restrictions were placed on the stadium by the Islington planners. Works were delayed in 2003 when Islington Stadium Community Alliance (ISCA) challenged Islington council's decision to grant planning permission on the basis of the 'congested inner-city' nature of stadium site.



*Fig 4.1 - Aerial view of triangular Emirates Stadium site (Ingenia Magazine Sept 2006)*

Some tenants were quite happy to sell up and move on but others were only prepared to move if alternative accommodation was found. The scheme ran into trouble in early 2001 when dispute over a 2.4ha strip of land owned by Sainsbury's supermarkets forced the council to consider a Compulsory Purchase Order (CPO). Delays associated with the subsequent judicial review and public enquiry in 2003 put the completion date back a year from the beginning of the 2005/06 to 2006/07 season.

### 4.3 Result

The 'value' the stadium represents was a result of effective design development and ongoing change management. Arsenal Football club appear to have supported an information exchange which vastly improved the supply chain's ability to deliver beyond expectations. Ensuring delivery effectiveness seems to have been largely the result of communication between the right people at the right time.

Arsenal Football Club procured the best people for the job, but not only that, they empowered them with specialist designers and responsive client decision making. Proactive management of localized risks, a spirit of collaboration and quality of process seem to have combined to produce a stadium of high value to the client and the community.

Incentivised contracts and collocation of team members undoubtedly contributed to effective communication but the expectations of Arsenal fans may have proved to be the strongest motivator. The stakes of success or failure for the client were so high that there was no choice but to 'keep it simple' and for everyone to 'get on with the job'.

It appears that throughout the process of conception, specification, and realisation a well informed project team were able to connect actions in the present to future stakeholder benefits.

## 5. Findings

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### 5.1 Project Complexity

*“You can’t get it all right ... it’s such a big project that even if we were going to do it again, and we’re not going to do it again! ... but if we did it again you’d change things next time round”*

Client’s Representative

#### 5.1.1 Definition Stage

##### *Business Objectives*

The Emirates Stadium was conceived in response to a shortfall in revenue from match day ticket receipts. Stadium capacity could not meet consumer demand and this compromised the client’s ability to maintain its position in a highly competitive marketplace.

The board’s decision to move to a new stadium required careful stakeholder management. The funding required for the project was seen by some to be diverting resources away from more immediate business objectives. The client addressed these concerns by connecting short term stakeholder ambitions with the strategic aims of the new stadium.

##### *Financing Structure*

The high percentage of debt financing meant the project was sensitive to changes in both the macro and micro economic environments. Investors had to be convinced of the income generating capacity of stadiums ‘in general’, and the Emirates Stadium project ‘in particular’ to produce a suitable financial return.

Legal challenges to the stadium's application for planning permission caused investors to withdraw funding in response to increased financial risk. The result was a short-term funding gap followed by a budget cut as a result of a lower market valuation for the project.

### *Community Attitudes*

Local concerns about the impact of large numbers of supporters arriving on match-days made the development of the stadium a political issue for Islington council. The negative attitudes of residents and the relocation of a large number of existing tenants required the council to take on additional resources.

In 2001 attitudes to terrorism changed forcing the design team to consider a stadium bombing as a credible threat. Traditional concerns associated with crowd control and crime prevention were extended to include the potential dangers posed by a determined and well organised terrorist attack.

### *Regulatory Standards*

Introduction of new statutory regulations provided an additional driver for change. Emergency services had to be satisfied that in the event of a serious incident the stadium could meet the required health and safety standards. To meet quality standards provision of disabled access had to be incorporated during the delivery process.

A Section 106 agreement set contribution levels for wider urban regeneration and improvements to transport infrastructure. Should the project have been unable to accommodate these within the agreed budget, then planning permission would have been refused, and the entire viability of the project may have been called into question.



### 5.1.2 Delivery Stage

#### *Strategy Development*

The majority of strategy development appears to have taken place before delivery began. The organisational goals associated with the decision to build the stadium were well established and widely understood. Some sub-strategies including collocation of the project actors, 'lump-sum' contract structure and design team novation appear to have been agreed well in advance.

Fit-out costs and specifications were still unresolved at contract award despite the agreement of a clear procurement strategy. The late development of internal specifications was not a deliberate attempt to incorporate design flexibility but a response to financial uncertainty.

The only area where strategic development may have occurred was the client's tolerance for risk exposure. Had the financial and organisational consequences not been so severe, the emergent financial risks may have caused the client to abandon the project altogether.

#### *Scheduling*

At the beginning of the project a council waste transfer station was located in the middle of the stadium site. This demanded that the project team organise construction work around a 'live' site environment to ensure council vehicles were still able to access waste facilities. Members of the client and contractor team noted that this resulted in the project team adopting non-standard working practices to meet a bespoke construction programme.

### *Change Management*

The project team had to respond to a total of 297 change requests for the stadium. This resulted in £35m of additional work that all had to be completed within the same rigid timescale.

Incorporating this extra work into the main construction programme involved consultations with the main contractor to inform timing constraints of client decision making. This proactive approach to change allowed specialists sub-contractors to use resources more efficiently and complete revised specifications within the necessary time period

### *External Events*

The withdrawal of the original catering operator from the stadium imposed new demands on the design team. Full operational specifications were yet to be resolved but concourses layouts had to be agreed in advance for the main contractor's shell and core work to go ahead. The appointment of a new catering operator lead to a revised configuration of internal space and a change in the balance between food and drink.

The client regulator UEFA also imposed new size guidelines for advertising boards used at European football tournaments. These new regulations were non-negotiable and affected the sightlines of some 11, 000 seats.

## 5.2 Client Sponsorship

*“They are very shrewd business people, I think the stadium has proved commercially to be an absolute success”*

Project Architect, Lead Design Consultant

### 5.2.1 Recruitment

Professional team selection was based on experience and independent recommendations. There is also evidence to suggest that the strength of existing relationships and quality of previous commissions were also contributed to evaluation criteria.

Recruitment was not solely focussed on technical skills, but on selecting a team that could work effectively together. The client was conscious that organisational values and culture would play a part in the ability of participants to work towards a common goal.

Contractor selection was just one example where the ‘honesty’ and ‘straightforwardness’ of interviewees was a key concern for the client representative. Personal integrity seems to have been expected and reciprocated across the entire project organisation.

Where the project team’s expertise was not sufficient to make the best value judgements then the client sought expert opinion. Participants identified significant ‘design development’ activities that involved senior members of the client’s management team.

The development of the corporate hospitality areas involved close collaboration between a specialist fit-out contractor and the client’s majority shareholder. Participants gave various examples of the client’s determination to improve food quality and the visitor experience.

The clients determination to deliver 'more than a world class stadium' resulted in a fact-finding mission 'all over Europe' in search of innovation and new ideas. The selection of an artificial pitch system was the product of 'attention to detail' and this extensive research programme. The client representative reported being focussed on not only what was going right but also what was going wrong.

Changing areas were seen as strategically important so the team manager was heavily involved with the conception and design of player facilities. Significant time and effort was invested to take advantage of the space available. Every effort was made to organise space in a way that had a positive psychological impact on players. Benches were deliberately curved so players couldn't hide in corners at half-time and a hydro-therapy suite was incorporated to revitalise tired muscles.

#### 5.2.2. Decision Making

Decision-making was prompt and project team queries were usually resolved within hours. The client representative was committed full-time to the project and located within minutes of the site. The client representative had the full backing of senior management and the freedom to 'think on their feet' when responding to dynamic events. When decisions exceeded the client representative's authority a 'very tight board' with 70% ownership of the company could convene at short notice to take prompt action.

The speed of decision making appears to have been endemic to the client's business culture. The expectation was that working practices should give individuals the power to solve problems without a constant need to seek approval from a hierarchical chain of command. This desire to be proactive and pragmatic was highlighted by the client's decision to simultaneously undertake planning, design and land acquisition.

### 5.2.3 Promoting Objectives

Recognising the stadium as a strategically important asset ensured that client's board members and major shareholder were fully committed to the project. The view was that the stadium represented 'their home' and, as such, represented an emotional as well as commercial investment for the client organisation.

The client organisation created a new position at board level to solely manage the 'property business' in the interest of stakeholders. The job description was clear; to realise 'more than a world class stadium' and exceed all visitor expectations. The attitude of the client representative, corroborated by others, was that problems had to be treated as a challenge. A combination of hard work and 'straight-line thinking' was encouraged even when this involved taking a novel approach to problem solving.

Interview evidence from all participants suggests that there were numerous occasions where the client or their advisors took a proactive approach to meeting stakeholder demands. This involved informal discussions, fact finding missions and market research. This exceptional level commitment was commented on by all participants.

Discussion between operators and contractors enabled a high level appreciation of the costs, constraints and potential value opportunities open to the client. Where possible detailed fit-out specifications were delayed to allow operational performance to be optimised.

All participants agreed that the visibility of the client representative meant that standards and expectations were always clear. Whilst it was acknowledged that many clients take an interest in the delivery process, the client proximity to the construction site, and their willingness to discuss problems at short notice, guided the project team in developing improved solutions.

There appears to have been a conscious effort by the client representative to connect sub-contractors and site labourers with the overall goals of the project. When a morale problem was identified, a tour for professional football players was arranged in an attempt to re-motivate the workforce. The client representative recognised that their appreciation for the 'mood' of the site was direct result of their close contact with members of the project team.

#### 5.2.4 Financial Activities

Financially significant events mentioned during interviews were the renegotiation of capital loans, pursuit of sponsorships deals, and pre-selling of operator contracts. All these activities were seen to be the product of 'strewed business people' within the client's organisation.

The £100m secured from Emirates Airlines in sponsorship was just one example of significant additional funds that the client was able to make available during the delivery process. The client managed this effectively by appointing an independent consultant based in California to negotiate the best possible deal.

## 5.3 Value Creation

*“It was a credit to Arsenal that they were able to make it a success for them, and for us, and for everybody else who was associated with the project”*

Senior Manager, Main Contractor

### 5.3.1 Process Improvement

#### *Cost Savings*

The client’s ability to make fast decisions ensured that any respond to financial or regulatory pressures did not result in excessive additional costs. A senior manager from the main contractor’s team identified constructive dialogue and speedy decision making as ‘absolutely fundamental’ to accommodating design changes and preserving the construction programme.

The consistent drive to improve design quality was informed by an appreciation of programme flexibility open to the main contractor. The client could quickly understand when variations were prohibitively expensive, or if there was a positive trade-off between cost and potential benefit.

#### *Productivity*

Participant made reference to an implicitly understood ‘integrity’ that enhanced productivity from the professional team down to ‘the guy fixing the re-bar’ or ‘pouring the concrete’. At least two participants described ‘trust’ as a principle component of their relationship with the client. The desire of the client to recruit an effective team and take a proactive role seems to have provided the stimulus for wider process efficiency improvement.

Where revised standards were the result of regulatory changes the client responded quickly to any demands for information. This ensured minimal disruption and the speedy agreement of an alternative design solution.

### 6.3.2 Product Improvement

#### *Design Quality*

The client's knowledge about stakeholder expectations meant that, despite the pressure for cost savings, value engineering exercises were not indiscriminate. The stadium roof is one example where short-term cost considerations were not allowed to compromise design quality. Operational experience and the need to deliver a landmark stadium ensured funding constraints were only allowed to affect those areas where the value did not justify associated costs.

Value management was ongoing throughout project delivery. This included the incorporation of additional functionality aimed at improving the stadium experience for users. A notable example was the use of padded seating in the General Admission areas. The client's ability to balance supporter expectations and commercial reality appears to have been a key element in realising opportunities to add value.

The client was also keen that the professional team take a lead in enhancing design quality. The Arsenal sign at the entrance to the stadium, whilst being photogenic, masks a serious purpose. Concrete lettering acts as an anti-terrorist barrier against a potential attack on the stadium. The barrier is a direct result of the development of alternative solutions to existing problems.



### *Commercial Value*

The client's focus on maximising commercial value resulted in visits to other 'top-flight' football stadiums across Europe. Examples of best practice were sought to understand how the new stadium would be judged in comparison to other similar buildings.

Pitch design was predominantly concerned with maintaining excellent playing conditions, but the decision to upgrade the pitch specification to a semi-artificial design now means the stadium is able to accommodate concerts up to six times a year. This improves revenue streams associated with the building asset by recognising the ability of the stadium to accommodate large scale events.

The use of improved technology can also be seen in other areas of the stadium. The inclusion of an electronic ticketing system eliminates ticket fraud and reduces gate staff to a minimum. This not only speeds up the visitor experience but means staff can be re-deployed to income generating areas of the stadium.

In addition great care was taken to ensure that restaurant facilities would provide the levels of service expected for potentially lucrative corporate events. This commercial awareness and appreciation of consumer expectations lead to a strategic partnership with well-known celebrity chef.

## 5.4 Summary

Having identified a suitable case study and necessary data for collection, this section presented the key findings from three principle areas of investigation. The focus has been on examining *environmental complexity*, *client sponsorship* and *value creation*.

The assessment of 'environmental complexity' involved a description of the unique challenges affecting project 'definition' and 'delivery'. Definition of the underlying objectives and standards were found to be driven by financiers, pressure groups and consumers. Balancing these competing expectations demanded that the client representative commit significant time and resources to the construction phase of the project.

Delivery processes were subject to geographical and scheduling constraints. Maintaining site-access for council vehicles interfered with the main contractor's erection programme resulting in non-standard phasing of construction work. Stadium operator demands were also subject to change forcing design development and remedial work to occur within an already stressed construction programme.

The client sponsor combined a familiarity of the programme constraints with an awareness of evolving commercial and regulatory expectations. Despite an initial perception that the sponsor's involvement would be predominantly *passive*, interviewees gave numerous examples of the client as an *active* and highly visible member of the project team. The client sponsor's proactive attitude was demonstrated in their commitment to investigating and exploiting opportunities to the stadium's functional value.

The client sponsor was able to resource 'design development' from a position of authority to utilise expert opinion and senior managers in decision making. Corporate entertainment areas and player changing facilities provide two clear examples where fit-out specifications were guided by a nominated member of the client's management team.

Whilst the client sponsor's 'hands-on' involvement was successful in identifying ways to improve the functional performance, it was their ability to make quick decisions that was seen by many interviewees as more significant. The support of majority shareholders ensured that fast well timed decision making avoided disproportionately high change costs. Remaining sensitive to the needs of the contractor and respecting the agreed construction programme ensured design variations did not compromise the integrity of the delivery process.

Architect and contractor representatives both identified that it was this ability to balance programme constraints with the demanding external stakeholders that was the 'root cause' of the client sponsor's positive contribution to the delivery process. Commitment, attitude and organisational structure all seem to have been key elements that influenced the client's ability to affect overall value creation.

In summary the project environment suffered from multiple sources of complexity that forced the project team to be dynamic in responding to emergent and sometime divergent stakeholder demands. Whilst the contribution of contractors and consultants cannot be underestimated, the client sponsor's ability to avoid delays and incorporate functional benefits appears to have been significant.

## 6. Discussion

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### 6.1 Management Processes

The findings indicate that modelling projects using discrete definition and delivery phases is inconsistent with optimal value creation for complex projects. Adopting traditional lifecycle approach inherently fixes project strategy and restricts the project team's ability to respond to commercial, financial or regulatory pressures.

Whilst MoP identifies the need to conduct a detailed assessment of factors affecting project success, in this case success factors could not necessarily have been predicted or mitigated against. Delivery challenges were predominantly emergent and related to external factors beyond the visibility of the local project environment.

Responding to revised financial and operational expectations was outside the project manager control and required effective client sponsorship. Despite loan and capital investment agreements being carefully negotiated, 'undetermined complexity' contributed an increase in the number of unknown variables and level of uncertainty. Taking a flexible approach to decision making highlighted potential value opportunities, resulting in additional organisational benefits for the client.

### 6.2 Decision Making

Initial decisions were taken under conditions of 'bounded rationality' forcing some strategic adjustments to be made during delivery. The client representative was able to leverage the skills and experience of the project team, to solve externally generated commercial or regulatory problems. When decisions proved to be inconsistent with the developing needs of stakeholders, then contactors and consultants were challenged to think creatively and suggest innovative solutions.

The introduction of new regulatory constraints by the client's governing body introduced a new set of expectations that had to be satisfied for the stadium to meet basic operational requirements. Concourse and catering facilities were subject to the effects of 'dynamic uncertainty' and a lengthy design development process. The withdrawal of the client's catering operator caused the specification and layout of kitchens to be revised. Performance metrics has to be agreed for the second time, requiring 'buy-in' from operator, client representative and sub-contractors.

Where possible the client recognised that delaying decisions until sufficient information were available had a commercial advantage. Corporate hospitality areas were very much unresolved at contract award and required additional time and resources to agree organisational needs. Without an emergent strategy, advance predictions about corporate hospitality service levels would have been at risk of becoming out-of-date.

### 6.3 Design Development

Stadium design evolved overtime and was focussed around improving the quality of product and process integrity. The client representative's sensitivity to contractor concerns ensured that the delivery process was able to incorporate unexpected organisational needs without compromising the construction programme. Both threats and opportunities were recognised in relation to the stadium's overarching strategic and operational goals.

The client's willingness to consider design changes was the product of a clear understanding about the value proposition of the finished built asset. Design development involved independent cost/benefit analysis rather than the consideration of temporal constraints alone. This highlights again how the client organisation's superior ability to make value judgements was instrumental in exploiting commercial opportunities to enhance the value creation process.

The success of the client representative could be said to be a product of their ability to build consensus despite divergent and sometime conflicting demands. Whilst the overarching strategic aim to procure 'more than a world class' stadium did not change, achieving this objective were very much a question of ensuring that delivery processes recognised and remained connected to competing stakeholder agendas.

## 6.4 Client Sponsorship

The client's contribution to success was not dependent on experience. In fact the opposite appears to be true. It seems in this case inexperience was a positive advantage that ensured problems were tackled with an open mind and opportunities to improve functional performance were not disregarded out of hand. The project dynamic appears to have been heavily influenced by the culture of the client organisation, to reward creativity, and encourage 'straight-line' thinking.

The client organisation's strategic alignment with the project, empowered the client sponsor's 'hand-on' approach, and facilitated a more proactive design and construction process. It would seem that well defined lines of authority, and an appropriate organisational structure, impact on the client representative's ability to fulfil the sponsorship role.

Organisational structure and level of commitment appear to have a strong relationship to the speed and effectiveness of decision making. This ability to react quickly to changing conditions was cited on many occasions, to explain the reason for the client's successful contribution to project delivery. The findings show that the willingness of the client representative to not be restricted by a generic set of sponsorship responsibilities resulted in greater design effectiveness and process efficiency.

The client sponsor's recruitment of additional knowledge and experience enabled potential value opportunities to be properly investigated. When opportunities were identified, functional enhancements could not have been realised had it not been for the client's determination to secure necessary funding.

It would appear that in the context of complex projects, heightened levels of uncertainty and diverse expectations demand that an effective project sponsor must fulfil the role of recruiter, financier, decision-maker and promoter concurrently to serve the full range of stakeholder interests.

## 7. Conclusion

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### 7.1 Where did we start?

We began by questioning the ability of the construction industry to respond to the needs of stakeholders without the proactive involvement of the client. We questioned whether existing ‘partnering’ frameworks offered a viable solution to improve the value of one-off complex projects. We asked whether generic project management models were consistent with an optimal delivery process.

In examining generic lifecycle approaches we focussed on the traditional ‘decoupling’ of project definition and delivery. For complex projects, we questioned how effective the Management of Projects (MoP) framework could be at defining objectives, strategy and standards in advance of delivery. Considering the ‘undetermined’ nature of environmental complexity, we suggested that to maximise organisational benefits, project strategy had to be in part emergent.

Understanding projects as ‘becoming’ rather than ‘being’ leads to delivery model focussed around a continuous process of value creation. It was suggested that governance of this more fluid management framework demands an increased level of co-ordination and control. Having established that complex projects are to some degree ‘evolutionary’, it was suggested that both the knowledge and authority of consultant project managers limits their ability to respond to externally generated value opportunities.

The client sponsor’s promotion of the project’s business case was identified as having a significant impact on project success. It was proposed that for the project to remain effective the client sponsor must take a leading role in reviewing ‘front end’ decision making in relation to new information or unforeseen events.



The theoretical basis for investigation concluded by suggesting that even if clients were to take responsibility for emergent decision making, 'risk attitude' would also affect their ability to optimise value creation. Only by exhibiting proper 'balancing behaviour' can a 'risk neutral' approach be adopted that maximises potential strategic benefit. On this premise a case study was proposed to investigate 'how' client sponsorship affected the level of value creation during the delivery phase of the Emirates Stadium project.

## 7.2 What have we learnt?

After selecting an appropriate case study for research, interviews were carried out to explain client behaviour described in press articles and project documentation. To fully understand the nature of the client's response to 'dynamic uncertainty', sources of project complexity were also thoroughly explored. Questions were focussed around the client organisation's approach to the delivery process and associated impact on value creation.

It was found that project complexity arose from changing investor confidence and site logistics. An 'open' system relationship between strategic and operational concerns made proactive management of risks and opportunities more difficult. The client sponsor's level of involvement allowed a more coordinated approach to ensuring both process efficiency and project effectiveness.

When it came to supporting a continuous value creation, the client sponsor's fulfilment of 'recruiting', 'financing', 'decision-making' and 'promoting' roles were found to be inextricably linked. The client sponsor's ability to recruit specialist expertise was found to be instrumental in improving the quality of 'design development'. Where 'lack of information' was the principle source for poor decision making, the client sponsor took responsibility for obtaining the necessary additional advice and financing to exploit commercial opportunities.

Stakeholder expectations were found to have evolved over time and could be said to have shown the highest level of uncertainty. Had it not been for the strength of the client's vision for the stadium, then the subjective nature of value judgements may have further increased project complexity. The client sponsor's ability to connect the project team with wider stakeholder opinion helped ensure that design changes which had the greatest potential to add value were recognised.

The decision to specify an enhanced pitch system is an example of a response to dynamic perceptions about what constituted 'more than a world class stadium'. Here the client sponsor was critical in identifying shifts in stakeholder expectations and articulating a response. Changing technological and commercial conditions made definition of an optimal design or operational strategy unrealistic in advance of delivery.

Whilst the client sponsor's 'hands-on' involvement was successful in identifying ways to add to the functional performance of the stadium, it was their ability to make quick decisions that was seen by many interviewees as most significant. A recognition of construction programme constraints contributed to a reduction in the cost of associated with late design change.

The client sponsor's commitment to minimising construction delays whilst remaining focussed on functional development appears to have resulted in a significant improvement to overall levels of value creation.

### 7.3 What does it all mean?

This research shows that projects which are subject to 'undetermined complexity' require definition decisions to be questioned throughout project delivery. Decisions made using 'bounded rationality', historical predictions or expert opinions are fragile and subject to changing environmental conditions. Whilst the need to respond proactively to changing conditions is widely recognised (Morris 1994,

Winch 2002), this research shows that an effective client sponsors is best placed to influence strategic developments and ensure process efficiency.

The client's effectiveness appears to be partly a question of organisational structure but also a product of attitude and commitment to the realisation phase of the project. The client representative's ability to empathise with the needs of the project team had both a motivational effect, and gave the client the ability to positively impact on the level of value creation.

The quality of interpersonal relationships appears to have been the driving force behind the project team's positive attitude when responding to setbacks and new challenges. Much of this creative energy seems to have been inspired by a shared feeling of trust between participants. The fact that 'everyone had integrity' inspired confidence and made the project team more likely to take risks and question the status-quo.

This research, despite presenting only a single case study, provides compelling argument for greater visibility and active participation of the client sponsor. The evidence shows that not only does this improve morale and productivity, but ensures that opportunities to add functional value continue to be exploited and resourced during project delivery.

APPENDIX I.

EMIRATES STADIUM  
ARCHIVE

**17<sup>th</sup> July 2003**

*Keith Edelman – Arsenal Football Club (Managing Director)*

“In terms of funding it’s a complicated process. We are dealing with a number of banks that have to go off to credit committees. We can predict returns based on the number of people attending and the price they are going to pay. We have very good coverage ratios on the project. Investment in the stadium has got a very good [rate of] return in the long term”

**2<sup>nd</sup> October 2003**

*Danny Fiszman – Arsenal Football Club (Director & Majority Shareholder)*

“We now have a stadium design that is fully developed. Depending on financing, we are ready to start construction of the stadium in the first quarter of next year”

“It is [now] a substantial project. We only wanted to build a new stadium and stay in Islington. This was our first choice and that of many of our supporters”

“There is no Plan B. We are within touching distance of securing the funding for the new stadium and remain fully committed to relocating there”

**23<sup>rd</sup> February 2004**

*Danny Fiszman – Arsenal Football Club (Director & Majority Shareholder)*

"We believe we have now effectively concluded the pre construction phase of the project and secured the Stadium for Arsenal with all its benefits"

"A lot of people have worked very hard to bring us this far but I would particularly like to thank Islington Council, who have worked alongside us from the outset, the London Development Agency and the Mayor for all their support. We now look forward to working with our banking group and chosen constructor, McAlpine, as we move into the construction phase of the project."

To finance this highly complex project, Ashburton Properties has obtained a £260million senior loan facility from a stadium facilities banking group which comprises: the Royal Bank of Scotland PLC, Espirito Santo Investment, The Bank of Ireland, Allied Irish Banks PLC, CIT Group Structured Finance (UK) Limited and HSH Nordbank AG. Interest on the senior debt is set at a commercial fixed rate over the 14 year term"

Arsenal is contributing the balance of the stadium project costs through funds from Granada, Nike and the sale of surplus land assets relating to the stadium site

1. Subject only to satisfying the conditions precedent prior to the drawdown of financing. Conditions precedent are legal and documentary requirements. Drawdown is the actual release of funds by the banks which can only be activated upon

completion of the conditions precedent. Arsenal expects drawdown to take place in approximately four weeks.

2. The overall project is estimated to cost £357million. This includes the cost of the land, planning, stadium design and construction costs. It also incorporates the relocation of local businesses and statutory services including the construction of a state-of-the-art £60million waste recycling centre and depot for Islington, the upgrading of transport infrastructure and significant regeneration of the surrounding area.

3. Ashburton Properties is a member of the Arsenal group of companies which owns the stadium site.

The Group has planning consent for the development of residential accommodation at Highbury once its move to the Stadium is complete.

Rothschild was the Group's financial adviser on the transaction and Slaughter and May acted as legal adviser. Allen & Overy acted as legal adviser to the Stadium facility banking group and Linklaters as legal adviser to Barclays.

#### **Benefits to Arsenal and its Supporters**

- An increase in stadium capacity will enable the many thousands of supporters who are unable to attend matches to do so in the future
- An increase in match-day capacity from 38,000 to 60,000 will generate substantial additional income, in order to sustain and develop the Club's football success.
- Playing in a world class stadium will affirm and further support Arsenal as one of the world's leading clubs
- An improved stadium providing a range of additional facilities will make spectators visits more pleasurable and encourage wider involvement , particularly amongst women and families
- New stadium will have improved access for disabled supporters and enhanced sight lines for all spectators
- The potential to use the pitch area for up to six non-football events per year, thereby providing a wider range of activities and create additional revenue streams for the Club
- The stadium will be 'energy-efficient', which is less costly to maintain

#### **Benefits for Islington Community**

- High quality architecture adding to the cultural richness of the area
- A world class sports facility that will attract worldwide visitors and increased spending power to the area
- Over 2,000 new homes, of which 25% will be 'affordable housing'
- The creation of 1,800 new jobs
- Surface finishes, street furniture, landscaping, lighting and signage will reflect the needs of all disabled people

*Dennis Berghamp – Player*

“I’ve enjoyed every minute that I’ve played at Highbury; it’s a special place. But I think everyone knows that this great old stadium isn’t sufficient for a Club of Arsenal’s ambitions”

*Martin Keown – Player*

“I’ve learned the ‘Arsenal way’ of doing things during more than 20 years with the Club, and I’m confident that the new stadium will be built with traditional Arsenal values of respect and integrity at heart”

*Ray Parlour – Player*

“Arsenal needs to move, I know there are massive queues for season tickets at Highbury and we would regularly be able to fill a 60,000 stadium. The new stadium will definitely make the club bigger and stronger”

*Bob Wilson – Player*

“If we wish to be real challengers to the best in Europe, this is the way forward, it is the only way forward. If it’s Arsenal I know, the move will be done in style. It’s about whether you want to be the best, or settle for second or third best”

Arsenal managing director Keith Edelman has explained why moving to a new stadium will actually increase Arsène Wenger's transfer kitty.

To the layman, taking on £260 million worth of loans to fund a new home seems bound to affect the manager's spending power. But it is not quite that simple.

*Keith Edelman – Arsenal Football Club (Managing Director)*

"Arsène has done an outstanding job and especially as he's done it by spending a lot less money than other managers"

"That's because at Highbury, we didn't generate significant revenue for him to spend more money. The big advantage of the new stadium is that we will have a bigger budget"

"There are some revenue sources before 2006 which will enable us to spend more money on the transfer budget - receipts of land sales and some money from Granada Media"

"We can invest that money in the purchase of new players then the extra revenue from the new stadium can not only repay the debt but also give increased revenues to the Club"

"We weren't generating much cash to invest in new players before. The money for Reyes has actually come out of the financing structure that we put in place to take us from here to the new stadium opening."

"We did take a calculated gamble in going as far as we had to go. There was debt on the balance sheet at the end of last year. But we had to spend money to get where we are today"

"Although the debt now rises quite substantially over the next couple of years, I think we're in much calmer waters now"

### **25<sup>th</sup> February 2004**

The future of Highbury will not be decided until just before Arsenal leave.

The club's home since 1913 is set to be turned into housing. It is expected that all four stands will be used for around 450 flats with the pitch itself remaining as a garden for residents.

The sale of Highbury will help to fund Arsenal's new home, which they expect to move into for the start of the 2006/2007 season, so managing director Keith Edelman is happy to wait for the best deal.

*Keith Edelman – Arsenal Football Club (Managing Director)*

"When you sell a property forward [Highbury Stadium] you always get a big discount"

"We are going to wait until nearer the time when Highbury is available before we make that decision. But there are two choices - sell it to a property developer or develop it ourselves.

"We won't make a decision until about March 2006 because then we'll have certainty on the stadium finishing. That is when we'll have an opportunity to go out to the market. If no-one wants to buy, we'll develop it ourselves."

### **12<sup>th</sup> March 2004**

When the Club announced the completion of funding for the new stadium project (23 February 2004), members of the Board stated that the Club would consider selling the naming rights for the new stadium.

After much discussion, the Club has decided move the issue forward and appoint Los Angeles based Envision, the world's leading naming rights and sports entertainment agency, to manage the naming rights process.



*Keith Edelman – Arsenal Football Club (Managing Director)*

"We are delighted to have appointed Envision as it is evident from their portfolio of clients that they are the world's leading naming rights specialist. We are building more than a world class stadium which will provide one corporate partner with a unique branding opportunity offering significant competitive advantages. We look forward to working with Envision and joining with a partner who places value on their image and association with our Club, stadium and powerful international audience reach."

### **11<sup>th</sup> August 2004**

Keith Edelman has revealed the latest developments at Arsenal's new stadium. The Arsenal managing director, talking at the release of record-breaking financial figures for the year ending May 2004, said the project was now ahead of schedule after overcoming a couple of major building hurdles

*Keith Edelman – Arsenal Football Club (Managing Director)*

"There were two big construction challenges," he said. "The first was putting the bridges over the railway line. This is difficult because you have to close the lines and if you don't get it right you miss your timing and you have to wait"

"One of the bridges is six lanes wide. The other is smaller but it still pretty big. However this has now been achieved"

"The second major change was getting the waste transfer unit moved. We built a new one at the Lough Road site and we managed to move [work] there a week early. So that is very good news"

"We are on schedule and moving ahead nicely. At the moment we have six of the eight cores [at the new stadium] up and we are just putting upper tiers on them"

"Two cores are not up yet because that is where the [original] waste transfer unit sits. But we are knocking that down."

### **28<sup>th</sup> September 2004**

There will be 150 executive boxes available at the Gunners new home but only a limited number are still available for sale. Each box will hold between 10 and 15 people and are priced between £65,000 and £150,000 per season. Positioned on the third tier, the boxes will form a ring around the pitch - allowing for numerous vantage points with spectacular views

*Adrian Ford – Arsenal Football Club (Commercial Director)*

"We are extremely pleased with how executive box sales at the new stadium are progressing, with only a very limited number still available. With the executive boxes and Club Level, which will be marketed in October, we will have a fantastic array of hospitality at the new stadium catering for all needs, whether it be corporate entertaining or individuals wanting a unique, high quality match day experience."

Networking bars will form the perimeter of each box allowing separate box guests to socialise if desired.

**29<sup>th</sup> September 2004**

Arsenal Football Club has today signed the biggest club sponsorship agreement in English football history with Emirates Airline, in an agreement worth £100 million.

The agreement provides the Dubai-based international airline with naming rights to Arsenal's new £357 million stadium. The new 60,000 seat stadium will be known as Emirates Stadium with immediate effect and for the next 15 years.

Arsenal remains fully committed to its existing partnership with O2, which remains official Club and shirt sponsor on an exclusive basis until the end of the 2005/2006 season.

**5<sup>th</sup> October 2004****Emirates Sponsorship Deal - OFEX Statement Summary:**

The sponsorship fees, of £90 million, will significantly enhance Arsenal's commercial revenues over the contract term. The sponsorship fees, which are payable by instalments, will provide Arsenal with operational cash-flows of £72 million between 2005 and 2012 with the remaining £18 million receivable between 2013 and 2020.

The present value of these sponsorship cash-flows, discounted at Arsenal's standard cost of capital and referenced against equivalent straight line cash-flows, indicates that the absolute value of the deal to Arsenal is in excess of £100 million.

In addition to the sponsorship fees Arsenal can earn bonuses based on team performance in each of the seasons up to and including 2013/14. Significantly, the deal provides Arsenal with long term certainty of income and strong cash-flow from one of its key revenue lines over the period when the Group's financial commitments arising from the construction of Emirates Stadium will be at their highest level.

**6<sup>th</sup> October 2004**

Managing director Keith Edelman believes taking on a corporate name for the new stadium was a necessity if Arsenal are to progress on and off the pitch.

Mr Edelman argued Highbury was not big enough to match the Club's plans and Emirates Stadium, as it will be called, needed to be paid for before the revenue it could generate would be seen throughout the Club.

*Keith Edelman – Arsenal Football Club (Managing Director)*

"We discussed it in fans forums and I think it depends which way you ask the question"

"If you ask 'would you prefer the stadium to be called New Highbury' then 99 per cent of fans would say yes. My hand would be up too"

"But if you have a choice about naming the stadium and investing more in the team then you have an interesting debate. The board is ambitious for the team and wants to invest as much as we can"

"We really could not have survived very well in this stadium [Highbury] if we were not in the Champions League for two successive seasons. We would have to contract our wage bill"

"In the new stadium we can invest in the team. We have a very long term deal and we have security over a very important revenue source. It is crucial in that respect"

## **29<sup>th</sup> October 2004**

Arsenal today began offering supporters the opportunity to become Club Level customer. Club Level is backed by an enviable range of first class bars, restaurants and lounges. Access to the Club Level will be via dedicated entrances separate from those for General Admission Ticket holders.

*Half Way Line Seats £4,750*

Only available on 4 year contracts

*Midfield Seats £3,500*

Available on 1, 2, 3 or 4 year contracts

*Behind Goal Seats £3,250*

Available on 1, 2, 3 or 4 year contracts

*Corner Seats £2,500*

Available on 1, 2, 3 or 4 year contracts

The double height, glass fronted restaurants will seat 3,200 people and afford impressive views across London. The restaurant and bars will mix quality hospitality with a relaxed ambience to create an environment ideal for entertaining family, friends and clients. All Club Level fans will be able to relax in the bars with free drinks at half time.

Club Level will be the only way to secure attendance at all competitive home matches for fans who are not on the Season Ticket Waiting List (Green Level) or are too far down the waiting list to secure a General Admission Season Ticket.

If you purchase a contract for more than one year the price will be fixed at year one levels for the duration of the contract (meaning there will be no annual price increases).

Fans will select their seats with the aid of virtual reality software and have any questions answered by the reservations team.

### **18<sup>th</sup> November 2004**

Arsenal will incorporate a new 'entry card' system at Emirates Stadium in an effort to crack down on ticket touts.

*Keith Edelman – Arsenal Football Club (Managing Director)*

"Entrance to the stadium will be gained by using proximity cards, which will be quicker for supporters and reduce the opportunity for ticket touts to flourish"

Edelman also reiterated the Club's commitment to giving the 'ordinary supporter' priority over businesses when the prestigious Club Level seats for Emirates Stadium are allocated.

*Keith Edelman – Arsenal Football Club (Managing Director)*

"The Club Level provides an opportunity for supporters to enjoy the atmosphere of a top football match while also relaxing in the kind of surrounds not really experienced at football stadiums in this country before"

"There are approximately 7,000 Club Level seats available and the interest registered already is very encouraging"

"We envisage that the area will be 75%-80% supporters, i.e. not businesses. The aim is for them to spend the day enjoying the footballing experience within the stadium, which means they can come early, enjoy food and drink at an affordable price and also stay behind afterwards to enjoy a drink."

### **14<sup>th</sup> December 2004**

The Club's new Reservation Centre, which will enable supporters to choose and purchase their seats at the Gunners' new 60,000 capacity home, has now officially opened.

*Ivan Worsell, - Arsenal Football Club (Box Office Manager)*

"This opening marks a significant milestone in the Clubs new stadium project - enabling the first seats for the new stadium to be purchased. This is a fantastic facility and will greatly help us deal with the huge number of tickets to be allocated at Emirates Stadium."

### **13<sup>th</sup> January 2005**

Arsenal Football Club is delighted to announce that the Compulsory Purchase Order (CPO) relating to properties on Queensland Road, which is situated near the Emirates Stadium site, has today been approved by the High Court

*Ken Friar – Arsenal Football Club (Director)*

"As stated previously, this did not affect the construction of Emirates Stadium, however, we are obviously delighted that the High Court has approved the London Borough of Islington's CPO"

### **10<sup>th</sup> March 2005**

Arsenal Football Club has unveiled the revolutionary new 'Arsenal Seat' - a specially designed seat for spectators to be included at Emirates Stadium, the Gunners' new 60,000 capacity stadium.

In announcing this specifically designed seat, Arsenal has taken stadia seating in Britain to a new level, with Emirates Stadium being the first to provide every seat in a stadium with an upholstered seat, thus considerably enhancing spectator comfort.

Starena, who have produced seating in major arenas including the Olympic Games in Sydney 2000 and Athens 2004, worked on the brief set by Arsenal Managing Director Keith Edelman. Within the revolutionary 'Arsenal Seat' there are integrally fitted pads, as well as a higher back and a larger seat area than in any other stadium in the United Kingdom, thus moving spectator comfort to the forefront of seat design.

The 'Arsenal Seat' is focussed on providing spectators with the ultimate comfort during a match and this has been reflected in the design of the backrest and lumbar region support within the seat. This commitment to supporter comfort in every seat has not previously been achieved in stadia seating and illustrates Arsenal's serious desire to provide a World iconic stadium for their supporters.

*John Beattie – Arsenal Football Club (Stadium Manager)*

"The 'Arsenal Seat' at Emirates Stadium will guarantee that every supporter will enjoy an improved comfort level from what they currently experience at Highbury. This product also demonstrates the Club's commitment to providing our supporters with the very best facilities possible at our new football home."

**21<sup>st</sup> March 2005**

Arsenal has announced that Delaware North Companies UK Hospitality Services (Delaware North) has been appointed as the official caterer for the Club's new Emirates Stadium.

Delaware North will offer a wide range of quality cuisine within the hospitality areas at Emirates Stadium which include the Club Level, the 150 Executive boxes and the exclusive Diamond Club.

Catering facilities at Emirates Stadium will include a total of 35 concession kiosks at General Admission Level, amounting to 280 meters of counter length - longer than two football pitches! Eight kitchens will service Club Level, which contains four substantial restaurants and spacious bars located in each of the four corners of the Stadium - together they will accommodate almost 7,000 people. The 150 boxes located one tier above Club Level will host circa 1,800 people and will be served by 75 pantries (eight full cook kitchens will serve the pantries). On the same tier, the exclusive Diamond Club area will deliver culinary masterpieces from a dedicated kitchen.

**25<sup>th</sup> May 2005**

Arsenal Football Club has today reached the half way stage in construction of its new 60,000 capacity home.

Since construction commenced in February 2004, an amazing 2,159,820 man hours have gone into building the stadium so far. There have been over 3,000 workers on site since the project began, with a current average of 935 construction workers per day.

A number of major construction milestones have been achieved to date; a £60+ million Waste and Recycling Centre was built at Hornsey Street, N7, to replace the old Ashburton Grove Waste Transfer facility situated on the new stadium site; two pedestrian bridges, 14 metres and 22 metres wide and weighing 360 and 1,050 tonnes respectively, were positioned along the eastern edge of the new stadium; and both the north and south sections of the roof structure, amounting to over 3,000 tonnes of tubular steel, were successfully lifted into place in December 2004 and April 2005.

Developments currently underway at Emirates Stadium, which is being constructed by Sir Robert McAlpine Ltd, include the commencement of work in the Executive Box areas and lower terraces as well as the external facade glazing which will cover an area of 15,000 m<sup>2</sup>, by the time it has been completed later this year.

*John Beattie – Arsenal Football Club (Stadium Manager)*

"We are very pleased with the extremely successful progress made up to the half way point. Now leading into the final year of the construction, we look forward to many of the specific features of the stadium being completed, for example the installation of the seating and implementing the pitch"

**16<sup>th</sup> August 2005**

As part of the traditions of a Topping Out ceremony, stadium contractors Sir Robert McAlpine Ltd nailed an evergreen bough in the stadium, the 'last' section of concrete was placed and a 'noggin of ale' was given to the stadium works manager.

As construction moves into the next phase, other aspects of the stadium project are also progressing well. The Club has received an overwhelming response from supporters to the opportunities available at Emirates Stadium with all 150 Executive Boxes at Emirates Stadium now sold or allocated.

*Danny Fiszman – Arsenal Football Club (Director & Majority Shareholder)*

"Today's event signifies a key moment in both the construction of Emirates Stadium and the future of Arsenal Football Club. Sir Robert McAlpine and all the project team should be hugely congratulated for what has been achieved to date in the building of the stadium. We are now one step closer to playing our first competitive match at Emirates Stadium in August 2006, a day we are all very excited about."

*Rolv Kristiansen - Project Director (Sir Robert McAlpine)*

"We are extremely pleased with the progress that has been made to date in the construction of Emirates Stadium. By completing the lifts of the roof structure recently, which was just one of the many feats we have achieved in the project, we have now reached the highest point in construction. We are looking forward to completing the construction of Emirates Stadium in time for the start of the 2006/07 season."

**23<sup>rd</sup> August 2005**

Thierry Henry and a host of other Gunners stars paid a visit to Arsenal's new Emirates Stadium last week. The Arsenal captain and team-mates Dennis Bergkamp, Robert Pires, Kolo Toure, Alexander Hleb, Emmanuel Eboue, Gael Clichy, Mathieu Flamini, Cesc Fabregas, Sebastian Larsson, and Quincy had a sneak preview at the fantastic new facilities on offer when the Club moves in 2006 after 93 years at Highbury.

Escorted by Arsenal Director Ken Friar and Rolv Kristiansen, Project Director for Sir Robert McAlpine Ltd, the players were taken to see the new dressing room, which measures approximately 13 x 7 metres, a physio and massage room, 12 x 5 metre warm up area and a hi-tech hydrotherapy spa. The tour also included a visit to the very top of the east stand terracing to see the pitch area from above and box level on the second tier which will include 150 executive boxes.

Arsenal's move to the Emirates Stadium remains on schedule, according to Keith Edelman.

Yesterday, the Club's managing director announced financial results for the year to May 31, 2005. He described an increase in pre-tax profits to £19.3m and the retention of turnover at £115.1m as a "solid" performance.

As expected, the construction of the Emirates Stadium looms large in Arsenal's figures right now but that will change sooner rather than later — especially as the project is going to plan.

*Keith Edelman – Arsenal Football Club (Managing Director)*

"We are very confident we will be open for the first week of next season"

"The structure is finished - we have the roof on, the bridges are done, we have moved the Waste Recycling Centre [to the new facility at Hornsey Street, close to Holloway Road tube station]. So the physical structure is there and that is the real engineering challenge"

"But there is still a lot to do. There is a huge amount of internal fixing. We'll have 17 kitchens, over 1,000 telephone points, CCTV cameras and a police control room to name just a few"

"Our aim is to be a leading European club and, once we get into the new stadium, we will be in that position. It is very income generous to us"

"When we move to Emirates Stadium we will have higher percentage of our income from gates. Very close to 50 per cent of our revenue will be gate income at Emirates Stadium, compared to around 30 per cent currently at Highbury"

"All the Executive Boxes are sold and Club Level is about 70 per cent sold out. That is way ahead of where we expected to be at this stage"

"The revenue from Executive Boxes and Club Level alone will be almost equivalent to the [whole] income at Highbury. So we'll be getting that and the revenue from 51,000 extra people [in the stadium]."

## **6<sup>th</sup> September 2005**

Arsenal are hoping to re-negotiate the loans they have taken out to fund the construction of the Emirates Stadium.

*Peter Hill-Wood – Arsenal Football Club (Chairman)*

"The interest rate on this facility reflects the construction risk inherent of a project of this scale. This risk is rapidly diminishing in line with the excellent progress being made on the construction works. Consequently we are now actively examining the opportunities to re-finance this loan, possibly through a bond issue, into a longer term debt structure and at a lower interest rate."



*Keith Edelman – Arsenal Football Club (Managing Director)*

“Twelve years [the term of the current loan] is a short space of time for an asset which we hope will last 50, 75 years or more. Therefore we are looking to go for 25 years at a lower interest rate. We have started the process but it will take six to nine months from now to do it”

“If we can do this it will reduce our debt payments on an annual basis and allow us to have more free cash.”

### **9<sup>th</sup> September 2005**

The launch date for The Stadium, Highbury Square, the residential redevelopment of the world famous Arsenal Football Club, has been announced. The apartments and penthouses will go on sale on October 29<sup>th</sup> 2005.

The ground, stands and pitch are to be redesigned into 711 high-spec studios, one, two and three-bedroom apartments and penthouses. The art deco façades of the existing Grade II-Listed East Stand, as will its famous Marble Halls, and the locally-listed West Stand will be preserved, in order to retain the iconic status of the Club.

Prices will start from £285,000 which includes the option to buy two Arsenal Season Tickets. The first ten buyers to sign on the dotted line on the October 29<sup>th</sup> 2005 will receive a football shirt signed by the current team. Car parking spaces will be available. Final completion is anticipated for 2010.

To register interest contact:

The Stadium Marketing Suite - 0845 2626000  
Savills — 020 7472 5010  
Anthony Green and Spencer — 020 7609 1111

### **6<sup>th</sup> October 2005**

Arsenal Football Club is the first Club in the UK to invest in a full scale revolutionary pitch growth and lighting system, which will help produce perfect grass growing conditions, even in the winter months.

The system, created by Dutch company SGL, will help assist in controlling and managing all pitch growth factors, such as light, temperature, CO<sub>2</sub>, water, air and nutrients, making a pitch of summer quality throughout the year a real possibility.

The new technology, which is already being successfully used at Dutch Champions PSV Eindhoven, enables continuous analysis of grass growth and precise definition of what the grass needs. Sensors which are installed in and above the pitch measure and register all growing conditions making it possible to check the history of growth factors and thus revealing the causes behind a decline in growth.

**31<sup>st</sup> October 2005**

Emirates Stadium continues to progress down the road from the Club's current home. Our Club photographer took these exclusive pictures on October 19. All will have cherry hard wood panelling, a plasma television, 10 to 15 seats, a burgundy carpet and a white ceiling and side walls.

**23<sup>rd</sup> December 2005**

On the eve of Arsenal's first game in 2006, Arsène Wenger re-affirmed his belief in the Emirates Stadium project. However the evidence will be plain to see tonight when 38,000 fans pack into Highbury for the visit of Manchester United.

*Arsene Wenger – Arsenal Football Club (Team Manager)*

"I don't think we will struggle to fill Emirates Stadium. The following of the Club is very big. We have 22,000 season ticket holders and many more on the waiting list"

"It's all down to our performances. If the quality of the performances is there and the quality of the team is there you will fill the new stadium."

And, of course, filling the stadium brings in revenue to the Club which, in turn, improves the side.

"I'm confident that Emirates Stadium will yield what it was supposed to yield"

"I feel this Club has a huge potential. When we play at home we lose 30,000 people compared to Manchester United.

"Once the stadium has been paid for this Club will be one of the big three or four in the world financially."

**3<sup>rd</sup> January 2006**

Most of the large structural work has been completed, but the final stages of development are probably the most exciting aesthetically as the stadium turns from a giant concrete mass to a state-of-the-art venue ready for players and supporters to enjoy.

For those of you who love their Emirates facts:

- Clocked up over five million person hours on site
- 4,500m of hand-railing in place
- 12,000 light fittings installed
- Over 2,000 doors fixed
- 475 plasma screens installed

The development schedule for the stadium over the next few months will include:

*January*

Work starts on the drainage and under-soil heating for the playing surface.

*February*

Installation of the major internal fittings at the stadium commences, including the seats.

*March*

Pitch seeding starts. Roof is completed.

*April*

Pitch seeding complete. Installation of turnstiles completed.

*May*

Installation of all 1,003 toilets completed.

*June*

All CCTV cameras (100+) positioned and tested.

*July*

1,000m2 Megastore completed. Refreshment kiosks and restaurants completed and ready to serve 100,000 orders per match.

Superb quality and total efficiency are the key elements of the myriad catering outlets and restaurants at Emirates Stadium.

The terms of Emirates Stadium's new catering contract demand that DNC invest £10 million into the catering hardware during construction and a further £2.5 million in the first three years after opening.

In return DNC gets to run the catering operation for 20 years. All the facilities will be owned by Arsenal Football Club and DNC will make its profits from running the catering, after paying the Club a percentage of the annual turnover — estimated at £17.5million.

Devices common in high street restaurant chains but rare in UK football stadiums, such as electronic table registration systems, hand-held waiter service and the latest electronic point-of-sale (EPOS) systems will be fully utilised at Emirates Stadium. "Technology is absolutely crucial for delivering customer service, and [gathering] invaluable customer data about what's selling," explains Simon Dobson, Managing Director of Delaware North (UK). "This will help us improve things going forward."

DNC will be responsible for more than 250 points of service. At concourse level, kiosks will serve hot dogs, burgers, chips, fried chicken, sandwiches, wraps, soft drinks and beer. The difference will be that state-of-the-art cooking facilities close to the point of sale will ensure that hand-held items are fresh and of superior quality.

Flat, tepid beer is not on the cards either. IMI Cornelius, a leading drinks dispenser supplier, has developed a new system called Ultra-Flow, designed specifically for event and stadium outlets. It can pull four pints simultaneously in five seconds and will ensure consistent ice-cold temperatures and head-height.

Across the whole stadium this will mean more than 2,400 pints of beer poured every minute, which of course means more sales in a limited space of time — and therefore fewer queues, especially at half time. Due to the easy-to-use electronically controlled system, staff won't need to be as highly trained. Reduced wastage, meanwhile, will provide greater keg yield.

*Mark Schlötel - IMI Cornelius 'Ultra-Flow' System Supplier (European Marketing Director)*

“We are looking forward to maximizing Emirates Stadium's till ring and minimizing the 'walk aways' ”

Leading the whole catering fit-out operation is catering services specialist KCCJ. The Kent-based firm, whose clients include Wembley Arena, the British Library and the Scottish Exhibition and Conference Centre.

*Kevin Slatter - KCCJ Catering Equipment Fitter (Managing Director)*

“We worked with leading experts within the industry to develop the beer system, and have had to organise the chilling, the bulk gas supply and also the massive task of distributing huge quantities of drink which in some cases travel some 100 metres to reach the dispense head”

The task of pulling together the plans for all the restaurants and catering units fell to architectural consultants Rosborough Pratley Associates (RPA). They pieced together the final design drawings after collaborating with electricians, equipment suppliers, and kitchen designers.

*James Breaks - RPA Interior Architects (Design Studio Manager)*

“The massive scale and mechanics involved will be invisible to the fan who benefits from less time spent queuing and more time spent participating, socialising, and enjoying Arsenal's many successes”

More than 15,000 square metres of glass will make public spaces, restaurants and bars pleasant and spacious environments where fans can linger long before and after the game.

Large LCD television screens showing match footage, exclusive interviews and commentary will provide a further incentive for fans to make match days an all-day outing, from brunch to evening meal. Meanwhile, the new Club Level area at Emirates Stadium means that fans have a very short distance to walk from the bars and restaurants to their seats.

Steve Brice is Head of Hospitality for Arsenal. It is his job to ensure that the whole customer journey is a "seamless, enjoyable experience". He is quick to point out that the new bars, kitchens and restaurants also provide excellent opportunities for the non-match business market of banquets, conferences, and exhibitions in an enviable central London location.

Moving onto the hospitality on offer within the stadium, there are 150 private boxes compared to 54 at Highbury. These are catered for by eight kitchens and 75 pantries with a capacity to serve 2,000 meals on a match day. Club Level ticket holders will be able to dine in one of four restaurants with seating for 3,000 covers. Whilst the food offers have not been finalised, Dobson expects the restaurant to offer buffets through to à la carte dining.

All 19 full-time Highbury catering staff have transferred over to DNC's payroll. That number will climb to 24 when Emirates Stadium opens, with 1,100 casual catering staff on match days.

### **19<sup>th</sup> January 2006**

Arsenal Football Club is delighted to announce it has signed a significant, long term agreement with Scottish & Newcastle UK Ltd that will see the company installed as the exclusive supplier of beer and cider at the new Emirates Stadium.

Emirates Stadium will feature an innovative beer system. A 'Glycol' cooling process will control the temperature of the beer so that the beer will be consistently served at the refreshingly cool two degrees centigrade. And a revolutionary fast pour, multi dispense system will ensure that supporters spend less time queuing for drinks.

*Adrian Ford – Arsenal Football Club (Commercial Director)*

"S&N is the leading brewer and cider producer in the UK and having their range of top-selling brands on tap will provide something for all fans. The 'Glycol' system is new to the UK market and we will be the first club in Europe to benefit from the product"

### **1<sup>st</sup> February 2006**

January 2006 was a month of great signings for Arsenal and it also included acquiring one of the hottest talents in the gastronomical game, Raymond Blanc, who will join the Club in March 2006. Two Michelin starred Blanc - who is a keen Gunners fan - will be Chef Director for the restaurant at Diamond Club - the most luxurious offering in football - at Emirates Stadium.

Blanc, in partnership with Delaware North, will oversee the cuisine and design for the restaurant at Diamond Club — the exclusive members' facility that will offer an unprecedented range of prestigious benefits from a selection of the world's finest brands including Le Manoir Aux Quat' Saisons, Ritz and Jaeger-LeCoultre.

Diamond Club members will enjoy a private lounge and an elegant restaurant and bar, serving complimentary food and wine throughout the day. Additional benefits will

include valet parking and a private concierge service from Quintessentially. Members will also have the option of travelling to European away games on the players' plane for a level of service never before achieved in football.

**9<sup>th</sup> February 2006**

The Club have been trialling the system at Highbury this season, piloting the scheme with approximately 5,000 Season Ticket Holders in the North Bank Stand for the whole season.

One of the biggest benefits of the Smartcard system, developed by UK based company Fortress GB, however is improved security, with the microchip in the cards making them extremely difficult to forge, eliminating counterfeit tickets and putting ticket touts out of business. Blocking and replacing lost or stolen season tickets also becomes an easy process. The system is also able to cope effortlessly with network and power failure, ensuring matches will start on time.

**13<sup>th</sup> March 2006**

Arsenal star Abou Diaby today secured the first of 60,000 seats to be installed at Arsenal's Emirates Stadium, the Gunners new home from August this year.

Placing the first seat onto the supporting steel framework, the French midfielder started the installation process of the 60,000 seats, which have actually been named the 'Arsenal Seat' and all of which will be upholstered - a first for football stadia in the UK.

**17<sup>th</sup> March 2006**

The pitch at Emirates Stadium, the new home of Arsenal Football Club from August this year, will be one of the most technically advanced in the world.

Designed, and currently being constructed by John Hewitt of Leicester-based Hewitt Sportsturf, the pitch will include the latest technology, above and below ground, to ensure a superb playing surface all year round.

Construction of Emirates Stadium started in February 2004 by contractors Sir Robert McAlpine. A year later, John was able to start work on the initial pipe installation for the under soil heating and the Forced Air Ventilation and Vacuum System (FAVVS). This system, developed over many years, is a ducted vacuum and air pressure system which can carry out two operations.

Firstly, cool, fresh air can be blown into the pitch, supplying additional oxygen to the crucial area around the roots of the grass plants. This provides aerobic conditions in which the grass can thrive, and reduces the risk of a black layer forming. In the vacuum phase, any excess water can be drawn down away from the surface to reduce the risk of waterlogging during heavy rainfall.

*John Hewitt – Hewitt Sportsturf Pitch Supplier (Managing Director)*

"This will be the Rolls Royce of pitches," says John. "Everything will be in place to ensure Arsenal always have a top quality surface to play on all year round."

**18<sup>th</sup> May 2006**

*Keith Edelman – Arsenal Football Club (Managing Director)*

"We are delighted that both Club Level and Executive Boxes have sold out three months before the first competitive fixture. All the supporters who have purchased Club Level have been excited by the quality and flexibility of the offer"

**26<sup>th</sup> June 2006**

### *DRESSED TO THRILL*

The dressing room areas at the new stadium are now at an advanced stage of construction. Pictures 1 and 2 show the home dressing room areas with the lockers/benches being built, note that the dressing room is a curved open space, something Arsène Wenger has insisted upon to create an inclusive feel.

### *SUPER SCREENS ENTER EMIRATES*

Back in the early 1990s, Highbury was one of the very first football stadiums in the UK to feature a giant video screen system. A landmark deal signed this month brings the next generation of giant video screens to Arsenal's new home and sees the Gunners once again scoring a technology first.

The new Emirates Stadium will be the first sports venue in the UK to feature permanently installed Diamond Vision screens from Mitsubishi Electric. The two new Diamond Vision systems are the very latest technology from Japan, based on super-high brightness LEDs rather than the old phosphor-screen system.

The new LED screens offer fantastically clear and colourful pictures — just like watching your own TV at home, but considerably bigger, of course!

### *SONY TO SUPPLY STADIUM TECHNOLOGY*

With High Definition functionality and networking capability at the heart of the stadium's communications network, the Club has worked with Sony Professional Services Europe and Venue Solutions to provide a range of products and solutions to ensure that Arsenal fans and visitors are entertained and informed quickly and easily.

*Adrian Ford – Arsenal Football Club (Commercial Director)*

"Our vision was to create the most advanced, first HD capable stadium in Europe"

***YOU'LL WANT TO WAIT!***

The quality of pre and post match entertainment at Arsenal's new stadium will encourage supporters to extend their Emirates Stadium experience. The Club have invested in a network of 439 Sony LCD screens, which will be spread evenly around the stadium, and feature an array of viewing opportunities for supporters. The aim is to provide a mix of football action, analysis and behind the scenes content that will build the atmosphere before the match and provide all the up to the minute news. We will also bring wider entertainment exclusives and features.

For the post match period, the Club are working with Sony and our production company to deliver a comprehensive post match review. Our TV show will be promoted in advance, just as pubs are accustomed to doing, so you'll know exactly what you can look forward to post-match at forthcoming fi



## APPENDIX II.

### ASSORTED PRESS CUTTINGS

## **APPENDIX II - PRESS CUTTINGS**

### **Construction Industry Press Extracts - Assorted Articles (2006)**

**Building Magazine (2006) “How Arsenal moved home”, 23 July 2006, pp 76-77**

*Stephen Edwards – Slaughter & May (Solicitors)*

“The construction contract was the key project document that enabled the club to raise the debt finance to construct the stadium on a non-recourse basis. As with Wembley the construction contract started life as a JCT standard form with contractor design”

“As the financing developed, amendments were negotiated to convert it into a lump-sum, fixed-price, fixed-date ‘turnkey’ contract where most of the construction and programme risk lay with Sir Robert McAlpine, the contractor for the job”

“McAlpine was prepared to accept single-point responsibility for design and construction on the basis that, on conversion of the contract from reimbursable to fixed price, the professional team was Novated to it. The professional appointments had been signed in advance with novation in mind to provide the contractor with recourse against the professionals in the event of a claim under the construction contract”

“The employer’s requirements were, generally, performance-based, although it was important to the club to specify and retain limited design control over areas such as the changing rooms and pitch”

**Architecture Today (2006) “Urbanism: Fever pitch: Emirates Stadium by HOK Sport”, Sept 2006 pp 54-68**

*HOK Sport (Architects)*

“The brief from club director Danny Fiszman was simple: he wanted ‘the most beautiful and most intimidating’ stadium in the world. The ‘beautiful’ part was understandable and we had many discussions about designing a simple, understated and elegant building distilling some essence of the old Highbury. But the ‘intimidating’ part was far more difficult. The club wanted the ultimate theatre for football; a cauldron where the atmosphere was a tangible element, where an opponent would draw breath before entering”

“The stadium is designed to be part of both the urban and social fabric of the area. The elegance required by the client is achieved by the reduction of the building elements to three main elements of the roof, seating bowl and building fabric. The horizontal crisp edge of the roof hovers over the building, and is held up only at eight slender points. The undulating, saddle-shaped seating bowl rises and falls above a horizontal disc of inclined curtain wall and stainless steel mesh”

“Emirates Stadium defines a new sophisticated, rich and spatially complex architecture, far from the engineering-orientated stadia of the past”

## **APPENDIX II - PRESS CUTTINGS**

### **Construction Industry Press Extracts - Assorted Articles (2006)**

State-of-the-art in this case has meant getting the basics right. Sightlines at the Emirates Stadium are superb all round. With the exception of a few pinch points where the bowl nears the tight boundaries of the site, the circulation and concourse areas are broad and well lit by natural light. Despite the scale of the bowl, the stadium feels intimate, and yet spacious too

Wider-than-usual seat treads reinforce this impression. And although it may seem a small detail, the choice of Ferco tip-seats – each one padded and with integrated stainless steel hinges and unusually generous dimensions – makes all previously encountered stadium seats seem shoddy and uncomfortable”

We expect experienced stadium architects like HOK Sport to get the basics right. But it is rare to find a client in the football world prepared to go the extra mile on fixtures and fittings

“On the Drayton Park approach the word ‘Arsenal’, written in outsized concrete letters, provides a further social focus. Such adornments may be de rigueur in today’s public realm. At British stadiums they remain depressingly rare, at best restricted to artless sculptures of yesterday’ heroes”

### **Architecture Today: Special Supplement (2006) “HOK Sport, Emirates Stadium, North London,”, July 2006 Handbook, pp24-25**

The design of the roof arose from four main requirements: it needed to comply with height restrictions, to maximise the pitch’s microclimate, ensuring that the grass has good airflow, to create an exciting atmosphere for supporters, and to produce a striking and constant eaves line

Prater has recently completed the 27,200 square metre roof contract. Before the specialist contractor moved onto site, more than 3,000 tonnes of mostly tubular steel were installed to support the roof

Solid aluminium soffit trays designed by Prater are sited between the web of design detailing and manufacturing method from Euroclad. Some 7,700 soffit panels finished in plain mill aluminium were manufactured by Euroclad, and successfully conceal the structural steel work. They also accommodate the stadium’s public address and lighting systems, the lighting being recessed into the soffits

Euroclad used specialist machinery and CAD design to ensure each piece was perfectly produced and finished. Polycarbonate sheeting marries into the roof finishes, allowing for structural and thermal movement

HOK Sport has incorporated a number of environmentally sustainable aspects in the new stadium design. A passive and mixed mode ventilation system will minimise the use of air conditioning below the podium and daylight is maximised through large glazed areas on the exterior elevation

## **APPENDIX II - PRESS CUTTINGS**

### **Construction Industry Press Extracts - Assorted Articles (2006)**

**Ingenia Magazine (2006) “Pitch Perfect: The construction of the new Arsenal Emirates stadium”, 28<sup>th</sup> September 2006, pp 10-15**

*Ian Liddell CBE FREng – Buro Happold (Structural Engineers)*

*Founding Partner in charge of design reviews for Emirates stadium structures*

#### **DESIGN DRIVERS**

“The club’s aim was to build a modern stadium with modern facilities. Sightlines would be improved and seating would be more comfortable compared to Highbury, with row spacing typically increased from 720mm to 850mm. Seating tiers would be steeper to ensure a better viewing experience for all spectators, regardless of location in the stands. In short, the aspiration was for a new state-of-the-art stadium with the best views, turf and ‘atmosphere’ predominantly meaning crowd noise, in the the Premiership”

“The design team, with HOK Sport as architects and Buro Happold providing the full range of engineering, was appointed in 2000 to prepare concept designs. This was made on the basis that when a contractor was appointed the designers would be transferred to the contract to form a design and build partnership”

“The stadium [was designed] to enable Arsenal to make enough money to compete at the top of the Premiership. To maximise earnings it is necessary to get the right balance of seat and facility prices and this affects layout and construction of the seating bowl. At the Emirates Stadium there is a mixture of general admission seating, Club Level seats with dining/bar facilities, serviced private boxes, and Diamond Club seating with gourmet dining. When the stadium is not in use the club and Diamond Club facilities can be used for corporate events or entertainment”

“Other vital functions for the stadium include crowd movement, safety and adequate provision of toilets – an important part of the overall visitor experience and something that has to be considered at the design stage”

“Upon entering the foyer areas, fans are immediately faced by food and drink counters that provide quick service, as well as an extensive number of toilets. From the foyer, fans are directed towards a vomitory that accesses the aisle adjacent to their seat. The whole system is simple to ensure the efficient handling of the large crowds that will regularly use it”

“Of course, cost is always an issue and spend on amenities has to be fully justified. Outlay had to be considered with regard to the overall business plan, which is tied in with anticipated income and running expenses”

“Ensuring good turf growth is an ongoing problem for any stadium. Factors that can be controlled by the design of the building are sunlight and wind. Illumination levels were checked by considering the geometry of the roof, the sun angles and the average amount of cloud cover. Additional light was provided by making the

## **APPENDIX II - PRESS CUTTINGS**

### **Construction Industry Press Extracts - Assorted Articles (2006)**

inner ring of the roof translucent. With the perimeter of the roof kept level, this leaves gaps at the corners where wind can blow through””

#### **STRUCTURE**

“All [roof] trusses were self-stable during erection which meant savings in time and temporary propping. This was an important consideration given the problems of site access and the inter-relation of demolition of the waste transfer station, construction of the bowl and assembly of the roof steelwork”

#### **MECHANICAL AND ELECTRICAL SYSTEMS**

“As with all modern buildings, Emirates Stadium relies on its services systems. These made up a substantial proportion of the construction cost. Alongside provisions for water supply, drainage and heating of occupied areas there were unusual specifications for the ventilation system to ensure it can cope with the surge of people arriving for a game”

“With the roof sloping down to the centre, pumped drainage for rainwater is required. They have been sized to deal with very high-strength storms, while overflows have been provided in case of power cuts, blockages or other malfunctions”

“Communication networks are of vital importance to the running of the stadium. Voice and data links are provided to all areas, as well as CCTV and public address networks. There are also T.V. screens in most areas to allow fans and staff to follow the match or take part in the on screen betting network. While this is not exceptional, with a perimeter distance of around 700m, the amount of cabling required to install and commission these systems meant the work was significant and challenging”

#### **DETAILED DESIGN**

“Many of the key packages required a substantial design input. For example the structural steelwork contractor was responsible for the design of connections and preparation of shop drawings, as well as detailing the cladding fixings. These details all require input from the design team to ensure the interfaces between packages run smoothly. Clarifying the design input and defining these interfaces reduces risk and makes for an efficient construction process”

#### **COMPLETION**

“Having agreed the GMP and a completion date, with hefty penalties for late delivery, hitting deadlines was key for Sir Robert McAlpine. The philosophy of the project director [Rolv Kristiansen] was to bring the milestone dates forward, gaining extra time if it was required”

“The stadium was completed over two weeks early, having incorporated a significant number of the client’s upgraded finishes on budget and the result is a stunning new landmark structure for football”

## **APPENDIX II - PRESS CUTTINGS**

### **Construction Industry Press Extracts - Assorted Articles (2006)**

**New Civil Engineer (2006) “Emirates Stadium: Keeping it simple”, 3<sup>rd</sup> August 2006, pp16-17**

*Andrew Veness – Sir Robert McAlpine (Main Contractors)*

*Senior Construction Manager*

“The most impressive thing about the stadium is its sheer simplicity. There isn’t a single wow-factor element. It doesn’t get much more interesting than the inclined curtain walling near the entrance”

“The client would tell us what he could afford and we’d try and work within that budget, realising that any savings would benefit us in the long run. The client knew that if he changed the scope too much it would come back and hurt later”

The project was procured as a two-stage, lump sum, guaranteed maximum price, design and build contract with full fit out and building services. The stage involved submitting brief method statements, a construction programme and initial cost estimates

Veness explains that each stage of the construction process was analysed in consultation with subcontractors and suppliers to minimise risk and secure programme and costings to get it built

McAlpine’s site set up was almost self sufficient; the planning, programming procurement, design and costing was all site based, The stadium roof posed a significant design risk due to the long lead-in time for fabricating, transporting and erecting components

Simplifications to the stadium construction included stripping out thinner post-tension concrete slabs for internal floors. These could have created more space to accommodate services, but using traditional reinforced concrete made it easier to detail box-outs when more information came-in

Using pre-cast concrete terracing instead of casting it in-situ and using traditional jump-form methods instead of continuous slip-forming for the internal cores were also adopted to keep things ‘straightforward’

*Andrew Veness – Sir Robert McAlpine*

“We’ve had to drill hundreds and hundreds of holes to accommodate services – we didn’t try and cast them before because this would have just held back concrete pours”

## **APPENDIX II - PRESS CUTTINGS**

### **Construction Industry Press Extracts - Assorted Articles (2006)**

Where Veness' team came under guaranteed maximum price, McAlpine stood to share half the savings. And if the stadium went over budget, it would take the sting. To the project's advantage the design team was Novated to McAlpine from the client.

"In 2003 the project's funding stalled, plunging the scheme into limbo. But instead of sitting back and waiting for the project to sort itself out, McAlpine diligently worked away on parts of the site it could. By February 2004, the project was back in action, and this time with the client adding an extra £35m to spend on upgrading catering, toilet and hospitality facilities.

*Andrew Veness – Sir Robert McAlpine*

"This [extra hospitality facilities] had the knock on effect of increasing the power requirements from 7MW to 14MW"

This meant cabling and ductwork took up more space, requiring larger service voids in more locations. The client took on design the risk of this extra work and made sure that queries were dealt with quickly as they arose.

### **Building Services Journal (2006) "Kicking off the season in style", August 2006, pp16-17**

*Julian Amey - Former CEO of CIBSE*

"In addition to electrics, the stadium includes 5.5MW of cooling capacity and 9MW of heating to meet the expected seasonal match day peaks. The plant equipment occupies a discreet area behind the upper terrace with minimal impact on the smooth architectural lines of the stadium, which ensures the stadium bowl is wonderfully uncluttered"

"Buro Happold used 3D modelling extensively in order to determine how best to locate the plant in the restricted and irregular spaces available. This de-centralised strategy for heating and cooling plant offers several advantages including reduced pipe-work sizes, sectionalised commissioning and less reliance on single items of plant, so if one fails the others are unaffected"

"The ventilation strategy uses a mix of systems, from air-conditioning in the restaurants to natural ventilation through concourse areas, whilst mechanical ventilation below the pitch will ensure that the grass will grow. Interestingly, Arsenal is using a system called Desso GrassMaster – a natural grass pitch reinforced with artificial fibres"

APPENDIX III.

PHOTOGRAPHS





*General Admission entrances with disabled access*



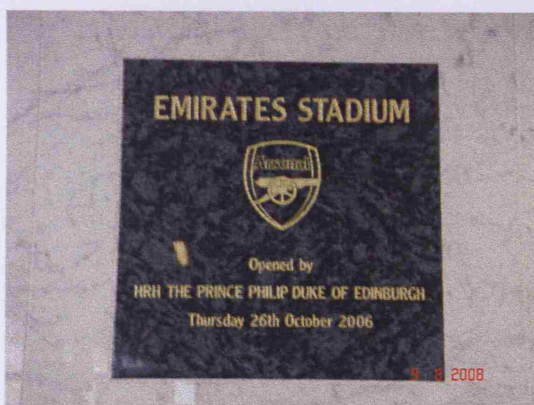
*The famous 'Arsenal Seat' developed to exceed expectations of comfort*



*A view from adjacent Benwell Road with no sign of the 60,000 seater stadium*



*Fortress 'smartcard' ticketing system at the entrance to 'club level' seating*



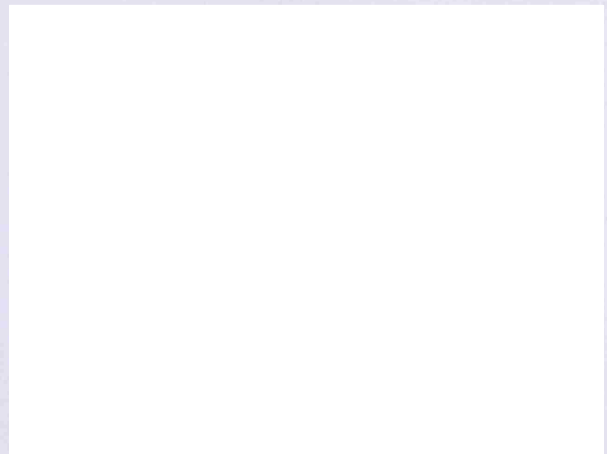
*Commemorative stone unveiled by HRH Duke of Edinburgh on 26<sup>th</sup> October 2006*



*One of several seats reserved in the Director's box for Danny Fiszman*



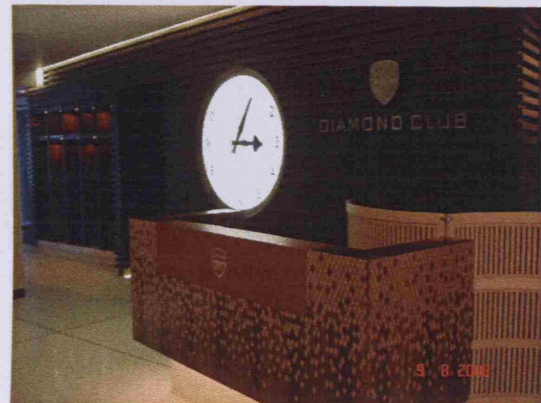
*Desso GrassMaster pitch appears slightly raised due to under-soil air-con systems*



*Infra-red rigs provide an extra means of keeping the pitch in the best condition*



*South stand lobby for Directors and Diamond Club members*



*Stylist reception desk at Diamond Club area on level 2*

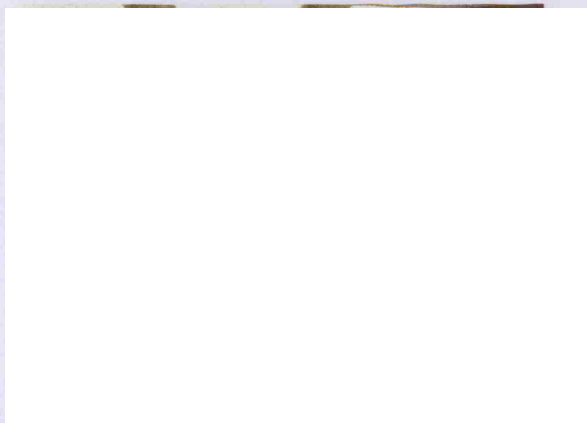


*South stand entrance for Directors and Diamond Club members*

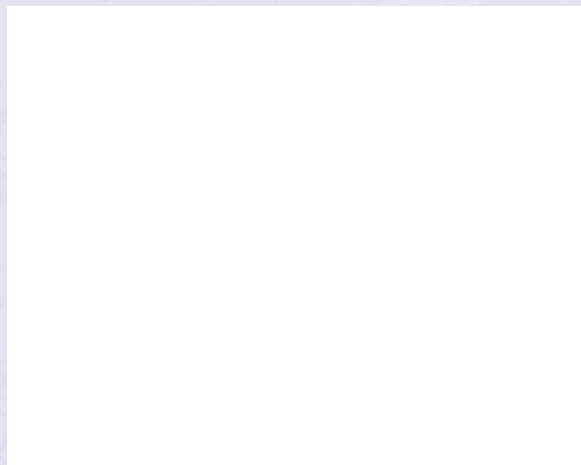


*Lift access to the Highbury inspired art-deco Diamond Club lobby*

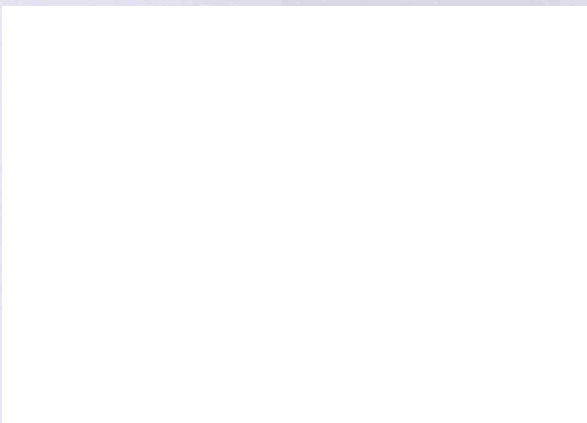




*Diamond Club dinning room designed in collaboration with Raymond Blanc*



*Diamond Club bar facilities provide a separate function area*



*Director's box is comfortable but modest in comparison to the Diamond Club*



*One of several seats in the Director's box reserved for Ken Friar*



*Horse-shoe shaped changing rooms designed to encourage positive energy by manager Arsene Wenger*



*Hydro-therapy spa is a feature that allows players to recover from injuries or muscle fatigue*



*Treatment room is second to none with six separate medical benches*



*Arsenal players have the advantage of separate warm-up area*



*London District Surveyors Association Award for the Emirates Stadium project*



*M&E systems are located externally to improve utilisation of space*



*Media centre for 150 journalists has won numerous industry awards*



*Shirt printing counter of the Armoury megastore is bright and spacious*





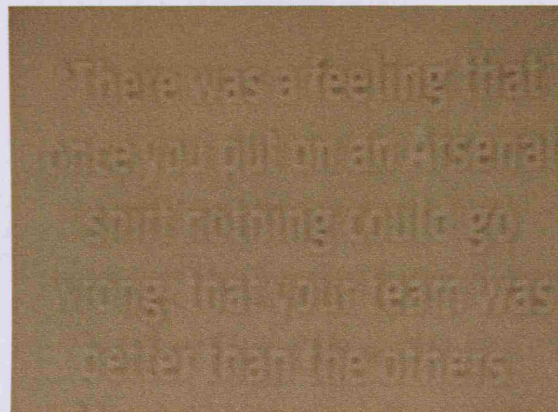
*Megastore layout delivers a modern shopping experience*



*View over the north pedestrian bridge showing the turquoise HQ building*



*Interior of the Arsenal museum gives Visitors as sense of the club's history*



*Famous quotations and memorabilia adorn the Arsenal museum walls*



*View of the North Stand showing Arsenal's famous insignia*



*View from the South Stand with one of the adjacent railway lines in the Foreground*





*North corner of the Emirates Stadium showing the curve space for air flow*



*Centre view from the Director's box with one of the main primary trusses*



*West corner of the Emirates stadium showing the polycarbonate roof sections*



*East corner of the stadium with one of the giant Mitsubishi television screens*



*Press conference facilities with ceiling mounted high-quality microphones*



*Press conference room includes a separate booth for translators*



*South pedestrian entrance with concrete security barriers*



*Underground valet parking for match days has direct access to premium areas*



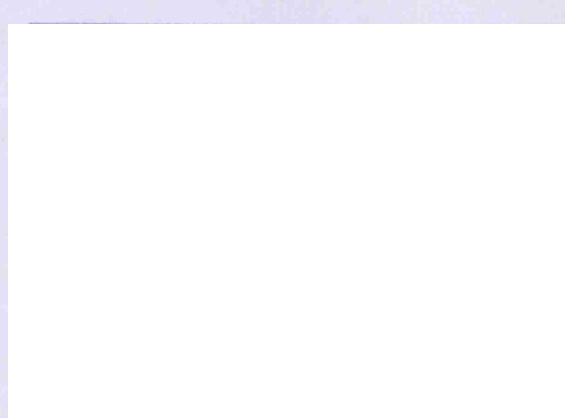
*Arsenal sign at Drayton Park is a cleverly disguised reinforced security barrier*



*Eastern bridge is the width of a three lane motorway*



*Despite years of development some of the Ashburton Grove site is still derelict*



*View from Drayton Park Station shows the extent of site access restrictions*

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